Railway Age

FIRST HALF OF 1920—NO. 10 NEW YORK—MARCH 5, 1920—CHICAGO SIXTY-FIFTH YEAR

Published weekly by Simmons-Boardman Pub. Co., Woolworth Bldg., New York, N. Y. Subscription Price, U. S. and Mexico, $5.00 a year; Canada, $6.00; foreign countries (excepting daily editions), $8.00. Entered as second-class matter, January 30, 1918, at the post office at New York, N. Y., under the act of March 3, 1879.

NATIONAL CORRUGATED SIDE DOORS
ARE FOUR TIMES STRONGER
SEE THOSE RIBS ?
ANOTHER ONE-MAN DOOR
UNION METAL PRODUCTS COMPANY
NEW YORK PHILADELPHIA CHICAGO DENVER ST. LOUIS
MONTREAL RICHMOND
HOUSTON KANSAS CITY PITTSBURGH

Alphabetical Index to Advertisements, Page 6. Classified Directory of Advertisers, Page

·A·C·C·
TRADE MARK

Put it there, Friend

FRIEND, we were not starting to say that where dependable service and absolute safety are demanded, you should install ACCO CHAINS.

But seeing as you have mentioned it, you are right. For wisdom indicates and performance proves that you should *put it there, Friend.*

What we started to say, however, was that ACCO CHAINS are going to be in evidence at the Coliseum Exhibit, Chicago, March 15th to 18th. You will find them at Booth No. 70, and what is more—when you drop in to see us as you are planning to do—you will find a hearty welcome from the ACCO Rep esentatives, and that the big ACCO Line includes chains for every railway purpose.

American Chain Company Incorporated

Bridgeport, Connecticut, U. S. A.

IN CANADA: DOMINION CHAIN COMPANY, LIMITED, NIAGARA FALLS, ONT.

General Sales Office: Grand Central Terminal, New York City

District Sales Offices: Chicago Pittsburgh Boston Philadelphia Portland, Ore. San Francisco

LARGEST MANUFACTURERS OF RAILWAY CHAINS IN THE WORLD

EDITORIAL

Railway Age

The Table of Contents Will Be Found on Page 5 of the Advertising Section

It's Time To Get Busy

The roads are now back in the hands of their owners. In a number of respects they are somewhat the worse for the wear and the deferred maintenance of the last two years. However, the problem now is to restore them to their proper condition at the earliest possible date. The settlement of claims for this deferred maintenance may be a problem for the legal department, the restoration of the properties is a very real problem for the maintenance officer. The season of planning is well advanced—the period of active execution is at hand. The outlook at the present time is not the most favorable. A large amount of work is to be done; a shortage of the principal materials is probable—at least deliveries will be delayed—the present shortage of labor is a forecast of the more acute shortage to come this summer. The net result of these observations leads to but one admonition—start work early. This means the inauguration of plans for the ordering of materials, for the organization of forces, and for the formulation of the season's program of work. An early start contributes to economy in maintenance any year—it is doubly important this year.

Piece Work in Railroad Shops

Now that the Railroad Administration is no longer in control of the railroads it is quite probable that many of the shop employees will start an agitation for returning to the piece-work basis of wage payment. Good workers have been penalized by the elimination of piece work and the leveling of all wages to a standard basis, regardless of skill and ability. Many of them objected to this attempt to submerge their individualities, but the action of the Railroad Administration was final. What the attitude of the railroad managements will be toward an attempt to reintroduce piece work is more or less of a question. It will take time to build up the morale of the workers, and every step which is taken by the managements must be carefully studied and thought out, with special regard to future developments on the railroads and particularly with reference to their relations with the public and the employees. An *esprit de corps* must be built up in the different organizations that will raise the efficiency and the standard of service and yet maintain a spirit of good will throughout each organization. It will be remembered that the Railroad Administration cut out piece work in a more or less drastic fashion, the main argument being that there was dishonesty in some shops in the wage accounting; there was also some question as to the comparative quality of the work under piece work and day work wage systems. We do not look to Germany for good examples, but it is rather significant to note that the labor-democratic coalition government, which owns the railroads, became so disgusted recently with the steadily decreasing volume of output from the railway employees, caused largely by the influence of communistic agitators, that it locked out the men in a number of the railway shops and announced that when the shops were reopened only those would be re-employed who were deemed desirable and who agreed to the reintroduction of the piece-work system. The high cost of living and its relation to production has been so thoroughly discussed in this country that the average citizen is now familiar with some of the elemental principles of economics and is beginning to realize the absolute necessity of increased production. It will be noteworthy if the demand for piece work in this country should come not from the railroads but from the workers themselves.

Advertising and Service

There are probably few things that will go farther towards encouraging the present favorable feeling for the railroads than the advertisements which some of the railway systems began running in the daily press on Monday. This kind of advertising is of value not only because it advises the shippers and travelers that the railway is prepared to do business "at the same old stand," but because it leads rather than follows. Advertising men will always emphasize that advertising to prove of best use must do just that. The public is slow to make up its collective mind and, having made up its mind, it is equally slow to change. It is the old story of an ounce of prevention being worth a pound of cure. The public is always ready to meet a public utility more than half way. At present it is favorable to the railroads and has a tendency to regard them as starting out on March 1 with a clean slate and a big opportunity before them. The carriers who are running these advertisements have that idea in mind, and they realize that if they take the public into their confidence and show what steps they are planning to take to keep that confidence and to supply the service that merits confidence their way will be that much easier in the long run. Of course, it must always be borne in mind that advertising does not get very far without service that merits advertising. In other words, as was brought out in these columns last week in speaking of J. H. Hustis' remarks before the New York Railroad Club, the railway men must keep the 5:18's and the 8:15's on time if they want to get results.

Fulfils Four-Year-Old Program

When President Wilson on February 28 affixed his signature to the Esch-Cummins bill, thereby making it a law as of March 1, he did not merely write "finis" at the end of the chapter of railroad history devoted to 26 months of government operation. He also recorded a large degree of fulfilment of a program which he outlined in a message to Congress at the time of the passage of the Adamson law in 1916, urging the supplementing of that act by the enactment of further legislation providing for a plan of compulsory arbitration and a full public investigation before a strike or lockout may lawfully be attempted. Before recommending the passage of the Adamson law providing for the introduction of the eight-hour basic day in train service the President required the brotherhoods to waive for the time being their demand for time and one-half for overtime. That demand also was subsequently granted by Director General Hines in December, 1919, but Congress failed to act on the President's recommendation for supplemental legislation for three years. In a larger sense the adoption of

the Esch-Cummins bill (or transportation act) also marks the completion of a program started by the President on December 7, 1915, which was based in part, at least, on representations made to him by the Railway Executives' Advisory Committee, when in a special message to Congress he said that "the transportation problem is an exceedingly serious and pressing one in this country. There has from time to time of late been reason to fear that our railroads would not much longer be able to cope with it successfully, as at present equipped and co-ordinated." The President urged the creation of a commission of inquiry to "ascertain by a thorough canvass of the whole question whether our laws as at present framed and administered are as serviceable as they might be in the solution of the problem," and "whether there is anything else we can do that would supply us with effective means, in the intricate process of regulation, for bettering the conditions under which the railroads are operated and for making them more useful servants of the country."

This resulted in the appointment of the Joint Committee on Interstate Commerce, known as the Newlands committee, which began an exhaustive inquiry in November, 1916, which was interrupted by the events resulting from the war before it had completed its work or made a report. The railroads were taken over by the government but the investigation undertaken by the Newlands committee was in a way continued during the hearings in 1918 preceding the enactment of the federal control law by the Senate and House committees on interstate commerce, whose leading members had been members of the Newlands committee, and resumed by the same committees in 1919 at the hearings undertaken for the purpose of determining what disposition should be made of the railroads after the expiration of the emergency for which they had been taken over by the government. Curiously enough, the record of the hearings before the Senate committee was officially entitled "Extension of Tenure of Government Control of Railroads" while the House committee hearings were entitled "Return of the Railroads to Private Ownership," but both committees agreed upon bills which provided for the return of the roads and also for putting into effect reforms in the system of railroad legislation intended to carry out the purpose of the President's message of 1916.

The two bills varied sufficiently to require a conference on them and the resulting delay was such that the President felt it necessary to take the situation into his own hands to the extent of issuing his proclamation of relinquishment on Christmas eve, under which the roads were to be returned regardless of legislation on March 1. The President, therefore, is entitled to the credit for returning the railroads and while Congress, or rather the two committees, are entitled to the credit for the bill itself, which was prepared without much in the way of suggestion from the President, his message of 1915 may be said to represent the beginning of the program now being completed.

The Esch-Cummins bill has been handled throughout largely on non-partisan lines and although politics was injected into it by the fact that a party issue was made for and against its passage by the Republican and Democratic leaders, always on the look-out for campaign material, and it was passed mainly by Republican votes, the part that a Democratic President has played throughout in connection with it is by no means negligible.

A more important question than that of the responsibility for the bill, however, is as to whether the measure is adequate to promote successful railroad operation or whether the reforms it seeks to accomplish have arrived too late. During the hearings before the Newlands committee the railroad officers emphasized the point that restrictive and conflicting legislation was preventing the adequate development of railroad facilities because railroad securities were no longer sufficiently attractive as investments to enlist the needed new capital, and much stress was laid upon the urgency of preparedness of transportation facilities for a possible war emergency, but before the government could be brought to a realization of the condition the emergency had arrived and the government found it necessary to take over the railroads on the ground that they had "broken down."

Now that two years of government operation have left the railroads still further behind the demands upon them, a sincere effort has been made to accomplish by legislation some of the things which the railroad officers for years have declared were necessary. Whether the legislation is adequate for that purpose or whether it has come too late is a question to be answered by the developments of the future.

The "Impossible" Has Happened

IT IS AMUSING now to recall many things that were said about two years ago regarding the future of the railways. Director General McAdoo was engaged in trying to revolutionize not only the organizations, but also the operation and the physical properties of the railways, in the interest of unification. He seemed to be making such progress that it became a commonplace of conversation for people to predict that the railways would never be returned to private operation. Many of them based their prediction, not upon the ground that this would be undesirable, but that it would be "impossible." Everything would be so changed that the railroads not only would not, but could not, be returned. Nevertheless, they have been returned. At 12 o'clock midnight on February 29, 1920, they were being operated by the government. At 12.01 A. M., March 1, they were being operated by the companies. The transfer was accomplished without a hitch.

The thing was done with so little trouble and friction as to have a tendency to deepen the impression in the minds of many persons that the railroad problem has been solved and easily solved. Unfortunately, that impression is erroneous. The passage of the new railroad legislation and the return of the railways to their owners is but a commencement of the solution of the problem. The railways are still just as short of facilities as they were when the government turned them back, and it will take years of work and billions of new capital to make their facilities adequate. Former Director General Hines has stated that the properties have been returned to the companies in as good condition as they were received by the government. This is certainly not correct as to passenger equipment, because the government never in more than two years of government operation bought a single passenger car. It can hardly be true as to locomotives and freight cars, because in two years of government operation the government bought only as many locomotives and freight cars as were required to replace the number ordinarily retired in one year. The equipment may be in as good condition in so far as repairs can make it so, as it was two years ago, but the amount of it is much more inadequate than it was then, and no repairs can make an old car as good as a new one. With regard to track, the government has not laid anywhere near as many new rails and ties as the companies normally did under private operation.

Government operation has caused numerous changes in the official personnel of the railways. It will be a long time before the roads will recover from the effects of the ruthless disruption of their official organizations which occurred under government control. The advocates and defenders of government operation said that it had solved the labor problem, but from the first to the last moment of government operation it was conducted in such a manner as to tend to alienate railway employes from private operation as a policy. It resulted in wholesale diversions of traffic from normal channels, and it will be months and years before it is restored to those channels. It resulted in enormous increases of operating expenses. Mr. Hines in a recent statement maintained that government operation had been as economical as, or more economical than, private management

would have been. That is a matter of opinion. Under government operation, railway expenses increased $1,600,000,000 a year. The *Railway Age* doesn't believe that an equal increase in expenses would have occurred under private operation. At any rate, government operation has left to the companies a legacy of enormously increased expenses. Only experience will show to what extent economies can be made under private management.

At any rate, both government operation and the new railroad legislation together will not solve the railroad problem. Under the new legislation the Interstate Commerce Commission and the railway managements may solve it, but they will not solve it unless there is the closest and most intelligent and friendly co-operation between the commission, the railroad managements, and the shipping and traveling public. Some people are disposed to say that the railroads have been returned, not to their owners, but to the Interstate Commerce Commission. We do not believe that is true in the sense in which it is meant. The commission has been given greatly increased power, but we believe that the future attitude of the commission, railway employes and the public toward the railways can be and will be determined chiefly by the railroad managements themselves. We believe that the railroad managements can cause private management to fail. We also believe that they can cause private management to succeed, and that by the exercise of diplomacy, public spirit and efficiency they will make it succeed.

The Law Requiring Safety Devices

WHAT IS A "DEVICE?" The new transportation act, section 26, empowers the Interstate Commerce Commission to order any railroad "to install automatic train stop or other safety devices . . ." That is a pretty comprehensive power to be granted in a single sentence. What did the legislators have in mind?* Quite likely the writer of the sentence contemplated chiefly, perhaps exclusively, the placing of some material thing on or near the track, as, for example, a signal post, a derailing switch, a magnet or an electric battery. That may be too narrow a construction.

In the minds of many people—probably most or all those who are familiar with patent-office procedure or who examine mechanical inventions—the meaning of "device" is limited to machines, implements, tools and instruments, or perhaps is occasionally extended to include chemical processes or manual operations which are most nearly analogous to processes carried on by means of machines or tools. But the dictionaries do not thus limit the word. Webster says: "That which is devised or formed by design; a contrivance; an invention; project; scheme; a stratagem." The definition of the verb "devise" includes "new applications of principles; to formulate by thought; as to devise a plan of defense. or an argument." A device, according to the Century dictionary, is "an invention or a contrivance; especially something of a simple character or of little complexity; as a device for checking motion (example: A bale-tie is a device for fastening the ends of hoops by which bales of cotton are held in compact form); a scheme or plan; something devised or studied out for promoting an end." That not all devices are material things has been made familiar by the English Bible for 300 years. They that hate knowledge and do not choose to fear God "shall be filled with their own [wicked] devices." The "devices of the devil" are familiar to many who are not very familiar with the Scriptures.

What is it to "install" a device? To install, according to the Century dictionary, may be (1) to place in a seat; (2) to place or instate in an office, rank or order; to invest with any charge, office or rank with the customary ceremonies; (3) to place in position for service or use. This last definition is termed a Gallicism.

These speculations in language are suggested by the sweeping terms of the section of the law referred to, evidencing an intention to make it all-inclusive; and by the declaration of the late Train Control Committee of the Railroad Administration that in this field the first need of the railroads, speaking generally, is not automatic train control, but the block system. In this the train-control board follows the ideas of the Interstate Commerce Commission. For 17 years that body has been recommending the introduction of the block system. Now it has the power to enforce its recommendation. It has always been careful to propose "the block system," expressing no preference for or against automatic signals. Taking into its view the whole vast system of passenger-carrying railroads, it could not take any other position, for on thousands of miles of lines of very light traffic the introduction of automatic block signals would be out of the question; the cost would mean bankruptcy. But in the use of the manual block system, as operated on lines of light traffic, the employment of "devices" is not very important, unless the term is construed to mean something besides appliances and machinery; and a narrower definition of that word might, conceivably, nullify this feature of the law. The two essentials of the manual block system are (1) a telegraph or telephone line, (2) a person competent (a) to operate the line and (b) to give stop and proceed signals to trains. The wire line is already installed on every railroad in the country, and that feature therefore requires no law. The only material devices required are a flag and a lantern, and these also are already provided, no doubt, at every railroad station worth mentioning.

The thing, therefore, that the commission will have to do, if it is to extend the use of the block system, will be to order the installation of a non-material "device"—a device to cause the telegraph line and the station operator to function; in other words, to order the adoption (installation) of block signal rules. A code of rules is a "device," as we have seen from the definitions quoted above; it can be called a plan or scheme.

The foregoing discussion is not so wholly speculative as it may seem. It reminds us that the value of the block system is in its application, not in its installation. The history of governmental regulation of this matter in England illustrates this. When the British Board of Trade first received authority to order the block system used, automatic signals were hardly thought of in that country, and all that the government was able to do was to require the installation of the appliances and the rules. It could not, or at least did not, compel the invariable enforcement of the rules. The problem was to secure the use of the absolute space interval in place of permissive blocking (the same problem that presents itself today in this country on many roads), and this was accomplished, not by statute, but by persuasion.

The Interstate Commerce Commission, therefore, may be expected to pursue a course modeled somewhat after its course in other safety matters, as for example, concerning the compulsory use of air brakes. The letter of the power brake law could have been made to impair safety instead of promoting it, but the commission wisely refrained from taking extreme measures. It can be equally conservative in the matter of

*Transportation Act, 1920, Sec. 26.—That the Commission may, after investigation, order any carrier by railroad subject to this Act, within a time specified in the order, to install automatic train-stop or train-control devices or other safety devices, which comply with specifications and requirements prescribed by the Commission, upon the whole or any part of its railroad, such order to be issued and published at least two years before the date specified for its fulfillment: *Provided*, That a carrier shall not be held to be negligent because of its failure to install such devices upon a portion of its railroad not included in the order; and any action arising because of an accident happening upon such portion of its railroad shall be determined without consideration of the use of such devices upon another portion of its railroad. Any common carrier which refuses or neglects to comply with any order of the Commission made under the authority conferred by this section shall be liable to a penalty of $100 for each day that such refusal or neglect continues, which shall accrue to the United States, and may be recovered in a civil action brought by the United States.

the space interval; but it has now a definite responsibility to see to the proper adoption of block signal rules, where they are needed, and to keep itself well posted concerning the way in which such rules are carried out. This last feature of the commission's duty applies on some roads where block signal rules are already in force, ostensibly, as has been shown in numerous investigations of collisions.

Again, the Engineer in Railroad Service

THE RAILROADS offered the first great field for the employment of engineers. Since the very beginning of railroad construction and operation in this country, the railway engineers have stood high in their profession and not a few engineers have risen to great railway executives. Railway location and construction, in fact, all engineering work related to railway transportation, has always had a fascination for the young engineer, and for years the railways were enabled to recruit their engineering organizations from the best material of the technical schools.

This condition no longer prevails. Commencing some ten years ago, the civil engineering graduates of the American technical schools have come to look with increasing disfavor on employment on the railroads until, as pointed out in these columns a year or two ago, the roads have had difficulty in obtaining enough first class men to maintain a high grade personnel. This diminishing interest in railway employment has gone even further so that now many of the technical schools report frankly that they are giving little attention to railway subjects for the very good reason that almost no students express any desire to follow railroad work. Replies to inquiries on this subject received from the professors of railway engineering and others in leading universities appearing elsewhere in this issue are most emphatic in this regard and there is no hesitancy in expressing opinions as to the causes.

Inadequate compensation appears to be the chief difficulty. "The graduates are offered more money by other industries" is the oft-repeated phrase in these discussions. This conclusion, however, is subject to some qualification. The tradition in this regard among the engineering students is, no doubt, based largely on conditions prior to the advent of government control. The scale of salaries now being paid by the railroads, barring certain exceptions, are approaching those prevailing in the industries, and if the railroads that raised their scale of salaries to engineers during the last two years will maintain these and if the others will bring theirs up to correspond, there should be no serious difficulty on this score.

The problem is deeper seated than the mere question of salary. An even greater source of dissatisfaction than the low pay has been the insecurity of employment. This factor has been virtually a dead issue since the summer of 1915, but previous to that time the engineering department of the railways, more than any other, was subject to an ebb and flow with each cycle of prosperity and depression. The men worked faithfully during the periods of easy money only to be laid off at the first sign of a stringency. Being forced of necessity to look for employment in lines offering a more secure tenure of service, they soon concluded that it was better to stay away from railroad work permanently.

This phenomenon points to the basic fault of the employment of engineers by the railroads, which in a sense applies equally well in regard to all classes of employees. The tendency is to consider brains as well as brawn purely as a commodity to be purchased for some transitory object with little consideration of the development of the individual as a permanent part of the organization. For instance, in the conduct of a given piece of construction work, it is required to employ, say, 20 rodmen, 10 transitmen, 4 resident engineers, 4 engineer draftsmen, 2 map draftsmen, etc. They are considered largely as a temporary adjunct to this work, like so many wheeled scrapers, rock drills or steam shovels.

While these men have before them a promise of advancement to the next grade above, in case a vacancy occurs, they are too conscious of a wide gap between the individual and the real head of the department, a condition that introduces a considerable hazard in the recognition of merit. To overcome this, the railroads must follow the lead of other large industries in perfecting arrangements that will overcome these handicaps of the ponderous commercial organizations of these times. When this is done and the prospective employee, be he technical graduate or high school boy, can see a clear line of advancement that insures recognition of ability, compensation will cease to the formidable problem that it is today.

Canadian Government Railways Now Total 22,000 Miles

LAST WEEK in London the stockholders of the Grand Trunk voted to accept the offer of the Canadian government by which the Grand Trunk is to be taken over and operated as part of the Canadian National Railways. The government originally built and owned the Intercolonial, 1,592 miles, and the Prince Edward Island, 279 miles, and had taken over the Canadian Northern system, 9,479 miles; the Grand Trunk Pacific, 3,579 miles; the Grand Trunk Pacific Branch Lines, 1,794 miles, and had built and been unable to dispose of, and was therefore operating, the National Transcontinental, 2,003 miles, not to mention other short lines and uncompleted projects, such as the Hudson Bay Railway. The acquisition of the Grand Trunk adds 3,579 miles to this system. In the Drayton-Acworth report made in 1917, some such arrangement as has now been carried out was recommended. The report, however, went on to say that "We think if the state took over and undertook to operate the Grand Trunk, the Grand Trunk Pacific and the Canadian Northern it would be morally bound to offer to purchase the Canadian Pacific also." No such proposal, however, as this has been made, nor is it likely to be made in the near future so far as one may judge from the tone of political discussion of the Canadian railway situation. Neither does the Canadian Pacific desire it.

Canada is entering upon the most extensive experiment in government ownership and operation ever undertaken by a democracy. Furthermore, it will carry out this experiment in competition with one of the best managed and most soundly financed private railroads in the world. It is undertaking this experiment unwillingly, accepting it as the less undesirable of two horns of a dilemma. Few thinking people in public life in Canada wanted to take over even the National Transcontinental, which the government had previously built. Neither did they want to take over the Canadian Northern or the Grand Trunk Pacific. On the other hand, having these three systems, some sort of new arrangement had to be made with the Grand Trunk. To make this perfectly clear, a very brief review of the situation is helpful.

The Canadian government built the Intercolonial and the Prince Edward Island Railway for political and military reasons and has operated them at a financial loss, if interest on the investment is charged for, but not entirely unsatisfactorily to the public served. The Canadian Northern system grew out of the extension of a line owned by William MacKenzie and Donald Mann, which originally ran from Port Arthur to Edmonton, and which was being operated at a profit. The pressure for new railways in Canada has been irresistible. MacKenzie and Mann, acting both as contrac-

tors and as the controlling interests in the Canadian Northern, were willing to build as much additional mileage as could be financed. The provinces and the Dominion government endorsed notes of the Canadian Northern system.

To what lengths the people were willing to go is shown by the case of British Columbia, which has guaranteed about $51,000,000 of railway bonds and has a population of less than 500,000; in other words, men, women, children and Indians have assumed an obligation of over $100 each for railways. When the Canadian Northern system had demonstrated that it could not earn its fixed charges, so that the provinces and the Dominion government were called upon to make good their guarantees, besides facing the prospect of advancing an unlimited amount of additional money for capital and other expenditures, there arose a demand for government ownership of this property, not because the principle of government ownership of railways was accepted as sound, but because there was a popular refusal to make any further loans to MacKenzie and Mann.

The history of the Grand Trunk Pacific was in some respects similar. The Grand Trunk undertook the extension of its system to the Pacific coast and guaranteed securities of the subsidiary company, the Grand Trunk Pacific, but also obtained from the Dominion and the provinces guarantees of Grand Trunk Pacific securities and loans to the company from the Dominion government. When the Grand Trunk Pacific failed to earn its interest charges the Grand Trunk refused to assume the entire burden of making good the guarantees, and as a matter of fact could not have carried this burden and remained solvent. Again the provinces and the Dominion government were called upon to make good their guarantees, with the result that the Grand Trunk Pacific was added to the national system. In assuming this burden, however, the government had a claim against the Grand Trunk, represented by its endorsement of Grand Trunk Pacific securities.

The Grand Trunk Pacific scheme contemplated an all-Canadian transcontinental system, of which the eastern end was formed by the Grand Trunk, the middle section by a line built by the Canadian government and known as the National Transcontinental, and the western section by the Grand Trunk Pacific. The Grand Trunk gets connection with its western system via United States lines, but for political reasons the Canadian people desired the building of the National Transcontinental, which connected up the eastern and western parts of the system by a road on Canadian soil. Having been forced to take the western and middle section of this system, it is natural that the Canadian government should desire also to control the one profitable part of the system, the eastern end. The agreement now entered into, the substance of which is printed elsewhere in this issue, gives the government the entire transcontinental system. Thus with the Canadian Northern, it has two transcontinental lines, both competing with the privately owned transcontinental, the Canadian Pacific.

Whether or not the solution of the problem adopted by Canada was the best that could be adopted need no longer be discussed, since it is now an accomplished fact; interest lies in the test which it will afford of the efficiency of government operated railways on a large scale.

It is the avowed intention of all Canadian politicians, and probably the earnest wish of most of them, to keep the operation of the national railways entirely out of politics. It would appear, however, unlikely that such a wish can be carried out. Plans for the operation of the government system have not been fully worked out. Opinion seems to favor the formation of a separate company which shall operate the national railways under the direction of a president who shall exercise all of the authority accorded by a board of directors to a chief executive in whom the board has every confidence. Who will be made president has not been decided. It is just conceivable that if the right man were selected for this position he might be able for a certain period to carry on the operation of the Canadian National Railways in much the same way that he would carry out the general policies of a board of directors.

Public sentiment will possibly demand the appointment of a Canadian to this position if it is created. The best railroad man that either the United States or Canada has produced would be none too large for the work. Much of the success of the Canadian Pacific has been attributable to the three strong men who have guided its destinies, Lord Mount Stevens, Sir William Van Horn and Lord Shaughnessy, and their work is now being carried on, apparently with great success, by E. W. Beatty. The Grand Trunk produced Charles M. Hays, a railroad man of the first rank, but unfortunately for Canada he was drowned in the sinking of the "Titanic." Sir George Bury, who was operating vice-president of the Canadian Pacific during and before the war, made a reputation as an operating man of great ability and left the Canadian Pacific service when Lord Shaughnessy retired to the chairmanship of the board. The Grand Trunk has been managed from London rather than from Montreal, and this has not been conducive to developing a strong individual initiative among its executive officers. MacKenzie and Mann are railroad builders, not railroad operating men, and furthermore, the Canadian people might hesitate to turn over to these men the National Railways after having paid their price to take the Canadian Northern away from them.

The problem of organization facing the man who undertakes the management of this 22,000-mile system is a particularly difficult one. The Intercolonial, which has practically all of its existence been more or less in politics, has an organization which of necessity cannot be free from political traditions. The Grand Trunk has a well-seasoned organization which possibly has suffered from absentee and lordism but which has well-developed traditions and standards. The Grand Trunk Pacific and the National Transcontinental have so lately begun operation that their organizations are in the first stages of development. The Canadian Northern's organization was completely dominated by the policies of MacKenzie and Mann, which policies have little or no relation to the present problems of operation and of consolidation with such entirely different organizations as those of the Intercolonial and Grand Trunk. Since this national system will have to compete with the Canadian Pacific, and since the Canadian Pacific is managed from Montreal, the logical place for the headquarters of the National Railways would also be Montreal. Ottawa, under the shadow of government buildings, is the least desirable place that could be found.

The most optimistic believers in the scheme which has been adopted hope and expect that with a 40 per cent increase in freight rates the National Railways will in a few years be able to pay their way. If charges for full interest on the entire capital cost of the system are fairly made, such a view seems rather founded on faith than on judgment based on the past. One thing, however, appears certain—any system of freight rates which will permit of earning full interest charges on the capital cost of the National Railway system will permit of very profitable operation by the Canadian Pacific. Canada has been compelled to follow wage increases granted in the United States, and the Canadian Pacific has increased its wage scales as greatly as have the other Canadian roads, but a 40 per cent increase in freight rates would more than offset these wage increases.

If the government plays fair and if the Canadian National Railways are run on a basis of paying their operating expenses and interest charges without recourse to the taxpayer, the Canadian Pacific can adhere to its traditions, both in the way of service to the public, betterment of its property and faith with its security holders. It would seem rather difficult for the Canadian government to so confuse its book-

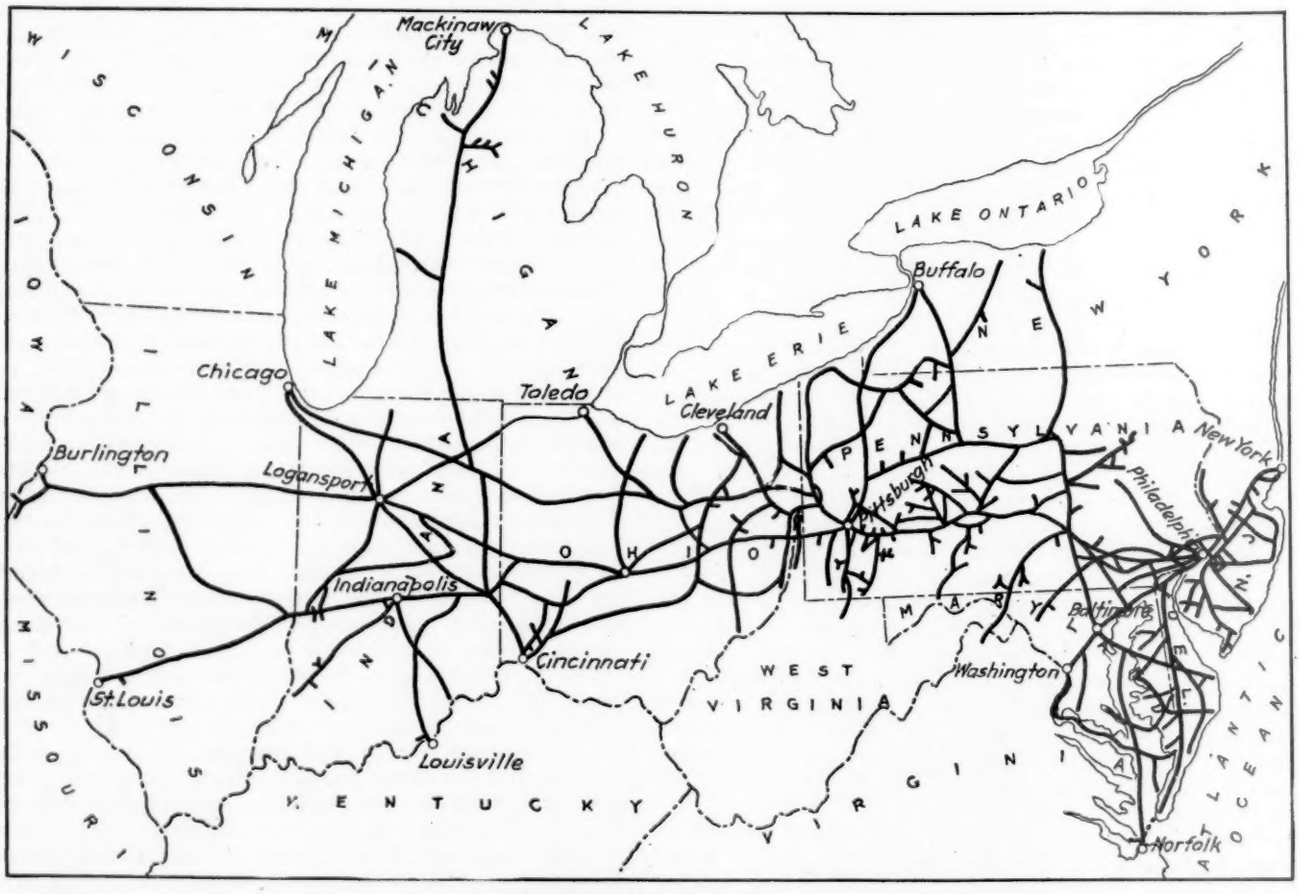
keeping as to make the present generation of Canadians forget the interest charges which the government has assumed in taking over the Canadian Northern, the Grand Trunk-Grand Trunk Pacific and in building the National Transcontinental. If politics are kept out of the management of the National Railways an able management could count on the development of Canada's almost untouched natural resources to make future operation of this great railway successful. Competition with the Canadian Pacific, if carried on fairly, will be healthy rather than otherwise.

Pennsylvania Railroad

THE MAGNITUDE of the business of the Pennsylvania Railroad, the complexity of this business, the number of men engaged in handling it, and the part it plays in the industrial life of the country would possibly be easier adequately to visualize if the system were spread across the entire continent. The great distances in this country have broadened the imaginations of Americans and especially of railroad men in this respect, and a 27,000-mile railroad system extending from Chicago and New Orleans to Los Angeles, Cal., and Portland, Ore., such as the system which the late E. H. Harriman put together, can be studied on a large scale map and a conception had of its magnitude.

The Pennsylvania system, which on March 1 was returned to the owning corporation, the Pennsylvania Railroad Company covers comparatively a small extent of territory. There are only 7,323 miles of road in the Pennsylvania Railroad proper, but this does not take into account the double track and four track lines, nor give any idea of the density of traffic. The system as a whole represents an investment of over two billion dollars and the track mileage, including second, third and fourth track, etc., totals 27,000 miles. The total tonnage of freight carried one mile in 1919 was 45,000,000,000 and the number of passengers carried one mile 7,000,000,000. In other words, in passenger business alone the Pennsylvania system did the equivalent of moving about sixty times the entire population of the United States one mile. The increase in business in the last few years is no greater, measured in percentage, than the increases in many other great industries, but when measured against the increases in facilities it probably ranks far ahead of any other great industry. In the past 10 years the freight business increased 55 per cent and the passenger business 95 per cent. The employees of the Pennsylvania total 286,150, or the equivalent of 10 divisions of the army at war strength.

It is quite impossible to draw any adequate picture of the relations of a transportation machine such as this to the industries of the country. If a man could spend two or three days riding about the Pittsburgh district he might from some faint conception of the part played by this railroad in the steel industry. If he could watch hour after hour the hundred-car trains of coal following each other as near as safety will permit over the low grade line from Harrisburg to the outskirts of Philadelphia, a double track line built exclusively for the movement of coal eastbound, he might in the light of the discussion of the coal situation during this last winter get a fairly good idea of the part that the Pennsylvania plays in supplying the eastern seaboard with fuel. Figures may be piled on figures, but unless the facts represented by the figures are realized in their full importance, the reader is liable to stumble along over billions as easily and unconcernedly as over millions. It is, however, of paramount importance in the present state of economic developments



The Pennsylvania System

in this country to try to keep in mind comparative values even when dealing with figures that run up into billions.

The Pennsylvania Railroad, following the practice adopted last year, has issued a report to stockholders containing only the income account of the corporation, the balance sheet and other financial statements, without appending thereto the statements of operation of the road under the Railroad Administration. Since, however, the corporation during 1919 received a fixed rental for the use of its property, based on the net operating income for the three years ended June 30, 1917, security holders will have to wait for a full knowledge of the operating conditions of their property until such time as the corporation receives and publishes the Railroad Administration's detailed figures. The report to stockholders, however, now issued, contains the following paragraph:

"In 1919 the total operating revenues were $487,885,014; operating expenses and taxes $469,486.659; and net railway operating income $13,821,701. In 1918 the total operating revenues were $468,113,646; operating expenses and taxes $437,209,403, and net railway operating income $24,337,004. In 1919 your lines earned 20.6 per cent of the standard compensation fixed by the federal control contract with your company and in 1918 they earned 36.3 per cent of that compensation."

While it is true that the bill just passed guarantees a continuance of rentals in the immediate future regardless of net earnings, a security holder would be short-sighted indeed who failed to give due weight to the tremendous significance of the paragraph quoted above. The annual report gives financial statements for 7,323 miles now operated by the Pennsylvania Railroad. The rental of this property amounted to $67,126,000 for the calendar year 1919. Other corporate income, which includes interest on bonds, dividends on stock, etc., added $25,234,000, making a total available for interest charges, rentals and dividends of $92,360,000. Interest and rentals consumed $49,492,000 and dividends and sinking funds $32,367,000, leaving a surplus of but $10,500,000—too little by far, if measured by the Pennsylvania's tradition of putting a dollar back into the property for every dollar paid out in dividends. But this statement of income has nothing to do with the earnings and expenses of the operation of the property as a railroad. The only figures that are available are the totals in the monthly reports of the Railroad Administration to the Interstate Commerce Commission and these are only for 5,380 miles, included in what the Commission classifies as Eastern Lines, the figures for the 1,754 miles of the Western Lines being shown separately. For comparisons with previous years, however, it is the Eastern Lines only that we can deal with, since previous annual reports did not include the Western Lines. The table at the end of these comments shows the principal figures for operation for the Eastern Lines in 1917, the last year of private operation, and 1918 and 1919, during government operation. The increases in expenses are appalling, even in the face of the great increases in revenues that have taken place.

President Rea in his report to the stockholders says: "In the resumption of the operation and management of its railroad lines and property under the new legislation on March 1, 1920, your management looks forward to efficiently serve the public and advance the interest of the nation at large. As a result of war conditions and the crisis through which the nation has passed, your property is being returned to its own management, with its roadbed and equipment below its usual standard and the earning capacity of the system materially reduced. Nevertheless, your directors confidently rely upon the officers and employees by their united efforts and active supervision to restore the Pennsylvania System and its standards of roadbed, equipment, stations, and public service at the earliest possible date, so that owners may be assured of a fair return upon their investment."

In 1919 there was an investment of $9,336,000 for improvements to roadway and structures and $7,981,000 in new equipment, in addition to the new equipment consisting of 16,150 freight cars and 165 locomotives which was placed upon the road by the Railroad Administration. This Railroad Administration equipment cost $62,000,000 and will be financed by the issue of equipment trust certificates to be taken by the government.

Even if the new railroad law is applied in the broadest spirit of fairness, the Pennsylvania will still face a very difficult problem in the next few years. Any one who has followed the valuation of the property, which is now about 90 per cent complete, will have no fear of the valuation showing a smaller total than the total face value of bonds and par value of stock, and since it is on the valuation of the roads in the regions served by the Pennsylvania that adequate rates will be based, the Pennsylvania security holders have nothing to fear on this score. Where the Pennsylvania, however, has an almost unique problem is in the difficulties of expanding its facilities. The main line between Pittsburgh and Philadelphia and New York is being worked to capacity now. It is hard to see how anything can be done toward adding greatly to the trackage of this line. Take the one element of land values; to buy additional right-of-way through this section of the United States would necessitate the expenditure of a sum so great that freight rates could not hope to be adjusted, without a dislocation of the commercial life of the country, so as to provide interest.

The hope of the Pennsylvania, therefore, lies in improving its motive power and rolling stock and, above all, improving the use of its plant, both main line, terminal facilities and rolling stock. Engineering skill and new scientific discoveries alone cannot solve this problem; the human element enters into it inevitably.

The Pennsylvania has drastically changed its form of organization. A brief description of the change was published two weeks ago in the *Railway Age* and a more detailed description will be published in the near future. The success of the Pennsylvania in the 71 years prior to government assumption of operation was due in very considerable measure to the organization which was developed, and the loyalty which Pennsylvania employees and officers acquired as a part of their training and which was a continuing influence in their work and earned its final reward in liberal pensions.

This organization now, after having been disrupted by two years of war conditions, general labor upheaval and government operation, is to be changed to meet the new conditions which have arisen. An important element in the future prosperity of the company, in the integrity of the two billion dollar investment, in the welfare of the 286,000 employees, and, finally, in the prosperity of the vast industry dependent on the Pennsylvania, will be the successful working out of this organiaztion and the building up of a corps of officers and men who will get the most out of the plant that it is capable of producing.

The following table shows the principal figures of the railroad operation (Eastern Lines) (this has nothing to do with the corporate income account), based on returns to the Interstate Commerce Commission for 1917, 1918 and 1919:

	1919	1918	1917
Average mileage operated	5,380	5,428	5,376
Freight revenue	$238,852,641	$239,484,059	$194,455,317
Passenger revenue	102,047,147	95,325,078	67,387,665
Total operating revenues	378,091,499	367,414,695	290,234,093
Maintenance of way and structures	56,004,008	51,683,998	33,508,588
Maintenance of equipment	112,445,087	99,145,128	58,790,210
Traffic	3,148,319	2,922,867	3,237,437
Transportation expenses	168,470,630	166,437,063	118,816,257
General expenses	9,000,267	8,146,648	7,150,474
Total operating expenses	356,018,468	333,624,524	225,649,257
Net operating income	22,073,031	33,790,171	64,584,837
Taxes	11,035,761	10,611,131	9,946,978
Railway operating income	11,003,494	23,149,178	54,596,230

A Scientific Study of Railway Track Under Load

Second Progress Report Covering Extensive Field and Laboratory Tests Begun in June, 1914

THE SPECIAL JOINT COMMITTEE of the American Society of Civil Engineers and the American Railway Engineering Association, organized six years ago to investigate and report on stresses in railroad track, has presented its second progress report to the two societies. This report, which supplements the first progress report, an abstract of which was published in the *Railway Age* for February 22, 1918, page 403, covers 172 pages and includes the results of tests with one type of freight locomotive and one type of passenger locomotive on the St. Louis-San Francisco to determine stresses in rail in relation to speed and

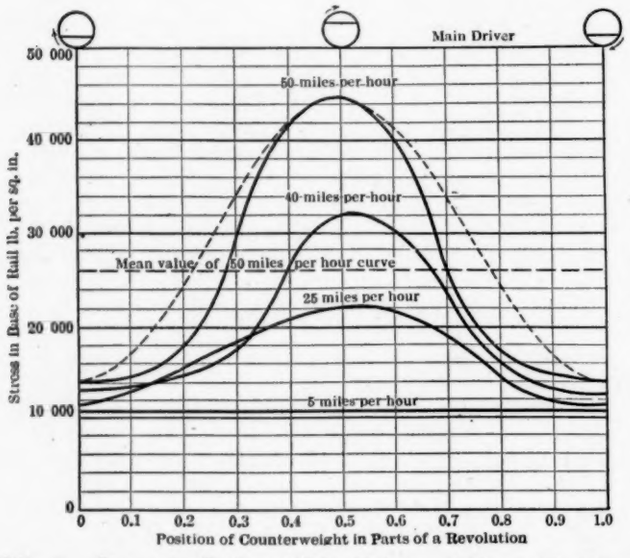


Fig. 1. Stress in Rail at Main Driver of Santa Fe Type Locomotive Throughout a Revolution.

counterbalance effect, and also the results of similar tests with one type of freight locomotive on the Illinois Central. The report gives the results of tests on the Illinois Central and the Chicago, Milwaukee and St. Paul to determine the depression of track under given loads and to find the depression and flexure of ties and their action under load for a variety of conditions found in track. The tests conducted in the laboratory of applied mechanics of the University of Illinois with a view of finding the methods and principles involved in the transmission of pressure from one or more ties downward and laterally through ballast materials are reported and an analytical consideration of the transmission of pressure is given. The report is presented under the following headings: Tests to Determine the Effect of Speed and Counterbalance on Stresses in Rail; Track Depression; Depression, Flexure and Bearing Pressure of Cross-Ties, and Transmission of Pressure in Ballast.

Effect of Speed and Counterbalance on Stresses in Rail

In the first progress report it was stated that analysis alone can give little real information on the important subject of the effect of speed of locomotive and train in increasing the stresses in track, and that reliance must be placed upon experimental data to determine the influence which speed exerts in this matter. Tests have now been made to find the variation in stress in rail throughout the revolution of the drivers and to attempt to separate in some measure the effect of counterbalance from that of speed alone.

An abstract of the report follows:

The tests on the St. Louis-San Francisco were conducted on a section of single track about three miles west of Springfield, Mo. The rail was 85-lb. C. E. section, rolled in October, 1906. The ties were 6 in. by 8 in. by 8 ft., of oak, spaced about 20 in. apart center to center, 20 to a 33-ft. rail length. There were 15 in. of chats ballast of good quality. The track was in fair surface and alinement, and was used as it was found. It had not been tamped recently, but as freight trains are not run over this stretch of track the effect of traffic is not great.

The tests on the Illinois Central were conducted two miles north of Champaign, Ill., on the southbound track. The rail was 85-lb. A. S. C. E. section, laid in 1902. The ties were the 6-in. by 8-in. by 8-ft. oak ties which had been specially prepared for this stretch of track. They were spaced approximately 20 in. apart, 20 ties to a 33-ft. rail. On the section used in the test there was 12 in. of stone ballast. The track had not been tamped for some time and was not in the best condition of line and surface, but it was used in the condition found.

In the tests on the St. Louis-San Francisco two types of

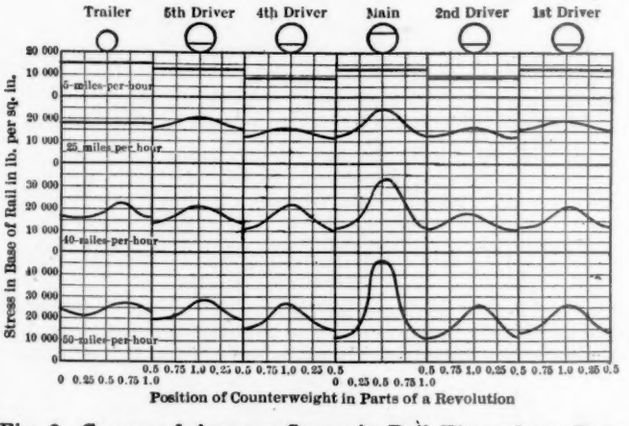


Fig. 2. Curves of Average Stress in Rail Throughout Revolution of Driver.

locomotives were used, the Santa Fe type freight locomotive and the Pacific 1060 type of passenger locomotive. The Santa Fe type locomotives were new, having been in service less than a year. The Pacific type locomotives had been in service about two years. The tests on the Illinois Central were made with Mikado locomotive.

The typical effect of the combination of speed and counterbalance upon stresses in rail for Series 1 of the tests with the Santa Fe type locomotive is shown in Fig 1, which gives sample curves for the main driver taken from the plotted results of the tests with the Santa Fe type locomotive from the data of the instruments on the rail on the right side of the locomotive only. The ordinates of the diagram represent stresses at the base of the rail in pounds per square inch. The abscissas represent the position of the counterweight at the time the wheel passed over the instrument with respect to its down position, the scale being in fractions of a complete revolution of the wheel. The

curves represent the average of the results of the several runs at each speed. For a speed of 5 mi. per hr. the valves are represented by a straight line, since the variation from it is small. As the driver is underbalanced, in general the greatest stress in the rail is developed when the counterweight is at its high position. At a speed of 50 mi. per hr., it is noted that the maximum value of the curve is 44,700 lb. per sq. in. and the minimum value 14,000 lb. per sq. in. The line marked "mean value of 50 mi. per hr. curve" is the average ordinate of the curve. The variation above and below this line may be considered to be due largely to the lack of balance of the rotating parts.

The difference between the mean value of the stress found from the curve for 50 mi. per hr. and the stress at 5 mi. per hr. may be considered to be largely the effect of speed without reference to effect of rotating parts (quite frequently called impact effect or speed effect), though part may be due to lack of balance of rotating parts. The dotted line of the figure was obtained by the use of the common formula for the vertical pressure of a rotating part, the calculation here being modified to touch the curve for 50 mi. per hr. at its high and low points. It will be noted that the form of the observed curves is more pointed than is the curve calculated by analytical methods, and also that the mean value of the curve is generally below the median point of the curve. These differences are characteristic of many of the tests, though it appears that there are as many cases where the observed curve is less pointed than the analytical curve as for more pointed curves.

Fig. 2 gives the stress in the base of rail throughout a revolution of a driver for all the drivers and the trailer for Series 1. These curves represent the average stress for any given position of counterweight.

In Table 1 are given the numerical values of the stress in rail under the several wheels. The mean values given are the mean values taken from the curves of Fig. 2 for an entire revolution.

In Table 2 are given ratios calculated from the data of Table 1 S is the average stress in rail at 5 mi. per hr. S_{25}, S_{40}, and S_{50} are the stresses in rail at the high point of curve for 25, 40 and 50 miles per hour, respectively. S_m is the stress found by taking the mean ordinate of the curve for the speed used. $\frac{S_{50}}{S_5}$ (called total ratio), may be considered to represent the total effect of change in speed from 5 to 50 mi. per hr., including the speed or impact effect and the effect of counterbalance. $\frac{S_m}{S_5}$ (the speed effect ratio) may be considered to represent the effect of speed as distinguished from effect of counterbalance. $\frac{S_{50} - S_m}{S_5}$ (the counterbalance effect) may be considered to represent the effect (increase or decrease) which may be attributed to counterbalance. The division into speed effect and counterbalance effect in this way is quite imperfect, but may be of service in helping to judge of these two effects.

In the first progress report it was shown that lateral bending of the rail occurred to a considerable extent; that most frequently the rail was bent outwardly at a point under a wheel and inwardly at a point between wheels, though a flexure opposite to this also was frequent; that the change in gage of track accompanying this bending was measurable; that the bending occurs with the locomotive at rest at low speeds as well as at higher speeds; and that the stress at the outer edge of the base of rail may occasionally reach three or more times that at the inner edge.

From an examination of the data of some of the tests described in this report it was found that the average stress from all the observations for the outer edge was greater than that for the inner edge. This conclusion applies at all speeds and at all positions of the counterweight for all the drivers and to the higher stresses found as well as to the lower. It also applies to the trailer and to the tender wheels. The average of the stresses at the outer edge for the several wheels ranges from, say, 20 to 50 per cent greater than the average at the inner edge; that is, the average stress at the outer edge is from 9 to 20 per cent greater than the mean stress in base of rail, which is the stress heretofore used.

This indicates that a general condition exists tending to give outward lateral bending in rail. No further investigation has been made to determine what that condition is. It may be noted that the difference in stress at the two sides of the rail was as great, or greater, under the main driver as under the other drivers. While the number of observations giving the higher stress at the outer edge was considerably greater than that at the inner edge, the number having the opposite relation was by no means small, showing that the swaying of the locomotive laterally is a factor in the problem.

A similar relation exists at points between wheels in the region of negative bending moment, though here the lateral bending is generally in the opposite direction from that at the wheel and the average stress at the inner edge is greater than that at the outer edge.

More important than the average value at the edges of the base of rail are the relative values of the individual observations. The ratios of the stress at edge to the mean stress in base of rail were plotted. A study of these shows that

Speed, in miles per hour.	Position of counterweight.	Trailer.	Driver Number.					Front truck wheel.
			5	4	Main.	2	1	
5	Mean value...	15 200	12 700	9 600	12 500	9 800	12 500	7 900
25	Up.....	.....	15 600	11 400	24 500	12 000	16 600	
	Down.....	.....	20 300	15 600	12 000	15 600	18 700	
	Mean value...	18 000	17 700	14 300	17 300	13 500	17 300	11 900
40	Up.....	22 400	13 000	10 400	32 200	10 400	11 500	
	Down.....	15 600	20 800	21 300	10 900	17 700	20 800	
	Mean value...	16 000	17 200	16 100	18 700	13 500	15 300	11 400
50	Up.....	27 000	19 300	15 100	46 800	11 400	13 500	
	Down.....	20 800	28 600	26 500	11 400	25 500	26 000	
	Mean value...	23 900	23 100	16 900	23 900	17 900	19 100	15 600
Calculated additional stress due to counterbalance at 50 miles per hour.....		600	8 100	11 400	24 200	11 300	8 100	700

Table 1. Stresses in Rail with Santa Fe Type Locomotive. Stress Given in Pounds per sq. in. at Base of Rail.

in 15 to 20 per cent of the observations, the stress at the outer edge is 33 per cent or more greater than the mean stress in base of rail, in a few cases reaching an excess of 50 per cent or more, and that this holds good throughout the revolution of the driver. An excess of 20 per cent is quite common. A stress at inner edge 33 per cent greater than the mean stress was found in, say, 5 to 8 per cent of the observations. As an example of a large difference in stresses at the two edges, though not of a high ratio of stresses, values for the main driver of the Santa Fe type at a speed of 50 mi. per hr. may be cited, 36,400 lb. per s.. in. at the inner edge, and 55,000 lb. per sq. in. at the outer.

The lateral bending in rail has some bearing on the design of rail section and on the design of tie plates. It will be seen that for the rail sections used, a ratio of stress at outer edge to mean stress in base of rail having a value of 1.33 means that the lateral bending moment in the rail is about 8 per cent of the vertical bending moment required to develop the mean stress. It should be noted that the results

herein presented were obtained with track which may be said to be in ordinarily good condition; the results given in the first progress report for track in poorer condition and for track with decayed ties show that the amount of lateral bending may be materially greater and that therefore the condition of the track is an important element in the problem. The ratios for total effect, speed effect and counterbalance effect show the relation between the stress in rail at the several higher speeds and the stress in rail existing at a speed of 5 mi. per hr. In all the series the total effect ratios are concordant and show a marked increase of stress with speed, the increase being faster than the first power of the speeds. The method used in making a division of this total effect ratio into effect of speed alone and effect of counterbalance is of course not accurate, and it may be expected that a large counterbalance effect will result in an increased speed effect as well.

The increase in stress in rail at drivers and trainlers beyond 5 mi. per hr. due to speed alone, varies almost directly as the increase in speed, though in a few instances it is at a somewhat faster rate. Averaging the values of the ratios at the drivers and trailer and for comparison using a speed of 50 mi. per hr. in all cases, it is seen that for this speed the increase in stress in rail due to speed alone over that at 5 mi. per hr. will be about 60 per cent for the Santa Fe type locomotive used, about 35 per cent for the Pacific type locomotive, and about 50 per cent for the Mikado type locomotive. At the tender wheels, the stresses in rail increase almost directly as the increase in speed. The increase in the stresses at 50 mi. per hr. over those at 5 mi. per hr. at the tender wheels is approximately as follows: An average of 75 per cent for the Santa Fe type locomotive; Pacific locomotive 100 per cent; and Mikado locomotive, 75 per cent. The ratios found for the drivers are in general less than those for the tender wheels (the ratios do not include the effect of counterbalance), and the increase at the tender wheels varies considerably for the different types of locomotives.

The counterbalance effect at the low and high position of the counterweight, with both underbalance and overbalance, is also brought out. With the main driver underbalanced and the other drivers overbalanced there is some transfer of pressure through the equalizer bars, tending to reduce somewhat the stresses due to counterbalance, but the effect is not very definite and seems to be uncertain. The stress due to counterbalance increases much faster than the increase in speed, though not always as fast as the square of the speed. The average increase in stress at the several drivers due to counterbalance effect, for a common speed of 50 mi. per hr. over the stress at 5 mi. per hr. is about 85 per cent for the Santa Fe type locomotives used; 30 per cent for the Pacific type; and 60 per cent for the Mikado type. The increase in stress at the main driver in each case is greater than this average, and with the Santa Fe type very much greater.

The following general observations are made:

It is evident that there is a decided advantage to the track in making the counterbalance of the several drivers differ but little from each other and from that condition which will give the best results, even though opposing conditions of counterbalance in the main drive and the adjoining drivers may have some neutralizing effect. An underbalance on one driver and an overbalance on an adjoining one will give a very undesirable cumulative effect.

Position of counterweight.	Trailer.		Driver Number. 5		4		Main.		2		1		Truck Wheel.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down
Average stress at 5 miles per hour, as basis of comparison.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
25 Miles per Hour.														
Total effect $\frac{S_{25}}{S_5}$	1.18	1.18	1.23	1.60	1.20	1.63	1.96	0.96	1.22	1.60	1.25	1.54	1.50	1.50
Effect of speed $\frac{S_m}{S_5}$	1.18	1.18	1.42	1.42	1.50	1.50	1.38	1.38	1.38	1.38	1.38	1.38		
Effect of counterbalance (increase or decrease). $\frac{S_{25}-S_m}{S_5}$	0	0	− 0.19	+ 0.18	− 0.30	+ 0.13	+ 0.58	− 0.42	− 0.16	+ 0.22	− 0.13	+ 0.16		
Calculated effect of counterbalance	+ 0.01	− 0.01	− 0.13	+ 0.13	− 0.23	+ 0.23	+ 0.43	− 0.43	− 0.25	+ 0.25	− 0.12	+ 0.12	+ 0.02	− 0.02
40 Miles per Hour.														
Total effect S_{40}	1.47	1.03	1.03	1.64	1.09	2.23	2.58	0.88	1.06	1.81	0.92	1.67	1.45	1.45
Effect of speed $\frac{S_m}{S_5}$	1.18	1.18	1.33	1.33	1.69	1.69	1.54	1.54	1.38	1.38	1.23	1.23		
Effect of counterbalance (increase or decrease). $\frac{S_{40}-S_m}{S_5}$	+ 0.29	− 0.15	− 0.30	+ 0.31	− 0.60	+ 0 54	+ 1.04	− 0.66	− 0.32	+ 0.43	− 0.31	+ 0.44		
Calculated effect of counterbalance	+ 0.02	− 0.02	− 0.33	+ 0.33	− 0.59	+ 0.59	+ 1.10	− 1.10	− 0.65	+ 0.65	− 0.31	+ 0.31	+ 0.05	− 0.05
50 Miles per Hour.														
Total effect $\frac{S_{50}}{S_5}$	1.78	1.38	1.52	2.25	1.58	2.77	3.75	0.92	1.17	2.60	1.08	2.08	1.97	1.97
Effect of speed $\frac{S_m}{S_5}$	1.58	1.58	1.82	1.82	1.98	1.98	1.92	1.92	1.83	1.83	1.53	1.53		
Effect of counterbalance (increase or decrease). $\frac{S_{50}-S_m}{S_5}$	+ 0.20	− 0.20	− 0.30	+ 0.43	− 0.40	+ 0.79	+ 1.83	− 1.00	− 0.66	+ 0.77	− 0.45	+ 0.55		
Calculated effect of counterbalance	+ 0.03	− 0.03	− 0.51	+ 0.51	− 0.91	+ 0.91	+ 1.74	− 1.74	− 1.01	+ 1.01	− 0.48	+ 0.48	+ 0.08	− 0.08

Table 2. Ratios of Maximum Stress, Mean Stress and Additional Stress to Stress at 5 mi. per hr. Santa Fe Type Locomotive.

Considering the stresses developed in the tests it is not strange that great injury to track is done by poorly balanced locomotives run at high speed. Even at lower speeds, where kinking of rail does not result, the punishment of the track is much greater than will be caused by well-balanced locomotives. The effect of counterbalance and speed is to add greatly to the load to be carried by rail, tie and ballast.

Effort may well be made to reduce the counterbalance effect on stress in track by use of the best methods of design of locomotive and by the use of material which will permit a minimum of counterbalance effect in both rotating and reciprocating parts.

It is important that care be taken to determine the actual weights and position of counterweights and the actual properties of the side rods and connecting rods. Care should be taken to learn whether the assumed division of load among the drivers in the completed locomotives is obtained.

Locomotives will give very different stresses in rail at the different wheels according to the wheel spacing, the division of load, and the effect of adjoining wheels.

It is apparent from analysis that for the spacing of wheels in the three types of locomotives the stress at the trailer under static load or at low speeds will be relatively large if the weight on the trailer is greater than, say, 75 per cent of the average weight on drivers; and the tests would indicate that for locomotives with even fairly good counterbalancing a discrepancy at low speeds between the stress at the trailer and the stress at a driver, due to a relatively heavy load on the trailer, may be expected to exist also at higher speeds.

It was found that the wheels of the tenders of the different types of locomotives gave quite different effects of speed on the stress in rail.

Attention may well be called to the method herein used in calculating the stress in rail for a combination of driver loads. The method ordinarily adopted in taking into account the counterbalance effect uses the dynamic augment for the given driver only. In getting the stress-producing bending moment in the rail, however, it is necessary to take into account the dynamic augment also of the adjoining drivers. With the main driver underbalanced and the adjoining drivers overbalanced the pressures given by the adjacent drivers are especially influential and the effect of the combinder loads should not be overlooked. It should be added, too, that the effect of counterbalancing upon bending moment in rail is different from the effect upon rail depression and pressure on rail—these must be calculated separately.

In the discussion of counterbalance, and the calculation of the stress produced in the rail, no attempt has been made to go into the complications of the problem involved in the yielding of the locomotive springs and of the track acting as a spring, the effect of the rotating parts not being in the same plane, and other disturbing elements.

The tests were made on 85-lb. rail. It is felt that the effect of speed and counterbalance in producing stress in rails of other weight will follow in general the results found with the 85-lb. section. The increase in stress at a given speed over the stress at 5 mi. per hr. may be considered to be produced by additional loads at the drivers, due to speed and the counterbalance, and the amount of these additional loads may be calculated by the use of analytical methods. The loads thus found for speed and counterbalance effect may be used in judging of the effect of speed and counterbalance with rails of other sections. The calculations for stress in a section may be made on the basis of the analysis for bending moments given in the first progress report, the section modulus of the given rail being used in calculating the stress developed by the bending moment found.

It is evident that wheel spacing, distribution of load among drivers and trailer, and counterbalancing have a marked influence upon the stresses developed in rail and also in the track structure below the rail. Adequate consideration therefore should be given to these elements in designing locomotives if the track is not to be called upon unduly to carry loads and to resist stresses which are unnecessary or excessive. The uncertainty which may exist concerning exact conditions of counterbalance is a matter which warrants greater attention.

Fuel Control Continued

BECAUSE OF DOUBTS as to whether Director General Hines and his representatives could continue after March 1 to exercise the authority over the distribution of coal delegated to him by the former fuel administrator, H. A. Garfield, who has since resigned, President Wilson on February 28 issued two executive orders providing for a continuation of Mr. Hines' authority over the "delivery, use, consumption, distribution and apportionment" of coal, and reinstating until April 30, the order of the fuel administrator of November 6, 1917, relative to tidewater trans-shipment of coal at Hampton Roads, Baltimore, Philadelphia and New York, and for the employment of and co-operation with the Tidewater Coal Exchange, as a common agency to facilitate trans-shipment and to reduce delays in the use of coal cars and coal carrying vessels, which was suspended on February 20, 1919.

J. W. Howe, commissioner of the Tidewater Coal Exchange, Rembrandt Peale, F. M. Whitaker and J. F. Fisher were designated as representatives of the President to carry out the provisions of the order, to exercise the powers of the fuel administrator and also after March 1 the authority vested in the director general of railroads relative to the export of coal from the United States, until April 30.

Director General Hines, Secretary Tumulty and Attorney General Palmer had held a conference to consider whether it was necessary to continue the control over coal distribution and it was decided that the above orders were all that the situation required. The orders stated that the action was taken "because of the present emergency and in order to insure an adequate supply and equitable distribution, and to facilitate the movement and to prevent, locally or generally, scarcity of coal."

Director General Hines on February 27 sent to the Senate a report in reply to a Senate resolution as to the source and extent of his authority to take charge of fuel distribution which was delegated to him at the beginning of the coal strike by Dr. Garfield, because at that time the Fuel Administration had neither funds nor organization available. He said in part:

"Unfortunately, during the strike period and down to the present time there has been a succession of severe storms and cold spells coupled with depletion of train and yard employees on account of the influenza epidemic, which have further seriously interfered with the handling of coal and all other commodities. Notwithstanding all of these difficulties and the abnormal demand for transportation of every character, the amount of coal produced per week greatly exceeded the weekly production during the winter in the past.

"On account of the strike and these extraordinary conditions, it has been impossible since the strike to supply coal in sufficiently large quantities to meet the extraordinary demands growing out of the depletion of stocks during the strike. This is true despite the fact that the total bituminous coal produced in January has been considerably above normal for that period.

"It has, therefore, been found necessary up to the present

time to continue in slight measure the control over distribution which was exercised by the Fuel Administrator during the strike. Every effort has been made to reduce to a minimum this interference with the normal distribution by shippers, and the Railroad Administration has constantly followed the policy of caring only for emergency needs and those essential consumers in the higher priority classes. While the railroads made contracts for enough fuel for their operation, the coal operators have insisted that the policy adopted at their instance by the Railroad Administration not to place cars preferentially for railroad fuel be adhered to. The result is that in times of car shortage the railroads have not been able to get their contracts completely supplied, and hence another reason for the continued necessity of diversion has been the need of caring for the fuel supply of the railroads to the extent that the railroad contracts were not fulfilled.

"I might also point out that upon the earnest insistence of the operators that their contracts made prior to October 30, 1919, be protected, the Fuel Administrator's order of November 12, 1919, was issued with the result that in many parts of the country operators have shipped only on such contracts, hence people who had no such contracts were unable to buy coal, particularly in the East, where under the government price program a higher price was permitted for export coal than for coal sold domestically. In other words, a condition was reached where there was practically no spot coal available, and in consequence a number of essential consumers have been unable to get coal except as the result of diversion. These factors have contributed materially to the necessity for continuing the exercise of the power of diversion, despite the fact that the policy of the Central Coal Committee has been to cut the exports of coal to a minimum.

"An present an embargo on the movement of all coal for shipment overseas is being maintained at all Atlantic Coast ports and no coal is permitted to be exported except on application by shippers, recommended by the Regional Coal Committee having jurisdiction and approved by the Central Coal Committee and representatives of the Shipping Board and State Department who are sitting with it. On account of the present serious shortage of coal in the Northeastern section of the country, no export permits are being issued for coal from ports north of Norfolk and only such coal is permitted to be exported through Norfolk as is not required for consumption in this country or cannot be transported to destination in this country by available boats in the coastwise trade. Export permits for such coal are issued in order that the coal may be promptly unloaded and the cars returned to the mines for further loading. Care is exercised in the issue of export permits to insure an equitable distribution of them among applicants.

"With the exception of the embargo on export coal, all restrictions placed on the distribution of coal in the United States and Canada during the strike by the various coal committees, have been removed, and the normal distribution of coal is interfered with only where emergencies arise which necessitate diverting to railroads, government and state departments and institutions, public utilities and other essential consumers. In making such diversions, the coal committees having jurisdiction select as far as practicable, coal moving to consumers of less essential character and occupying a lower position on the Fuel Administrator's preference list. Such diversions are necessitated by the inability of some essential consumers to secure, by purchase, the additional coal they require, there being practically no coal available for sale in the Northeastern section of the country at the price fixed by the Fuel Administrator. Such diversions are made only after the committee having jurisdiction is assured by the applicant of his actual necessity, as required by the regulations established at the beginning of the strike.

"For the purpose of continuing this present control over the distribution of bituminous coal, the Central Coal Committee continues to function, and with respect to the export situation, operates through a sub-committee, on which the State Department and the Shipping Board have representation. In so far as diversion of coal is necessary for the protection of consumers within the United States, the Central Coal Committee relies upon the regional organizations which, for this purpose, have maintained in part the Regional Coal Committee."

Meanwhile all the acts of Director General Hines since he took over the functions of Dr. Garfield have been challenged by Rush C. Butler, general counsel of the National Coal Association, who in a legal opinion submitted to the association holds that the Railroad Administration's authority to divert coal under the order of October 31, 1919, expired when Dr. Garfield resigned on December 13 and that every ton of coal thus diverted since that time has been without authority of law.

The attorney further holds that confiscation of coal by the railroads is "unlawful conversion" and that the owners of the coal are entitled to damages. His opinion states that where the Railroad Administration has confiscated coal moving on contracts at less than the government price the owners of the coal can recover the difference between the contract price and the government price.

Not only are the carriers responsible for such losses, but Mr. Butler has informed the association, in his opinion, "that the officials of the Railroad Administration concerned are personally liable for the amount of damages and may be sued therefor."

To Prosperity and Prosperity
THE RAILROADS
CUMMINS-ESCH RAILROAD BILL
To Bankruptcy
THE RAILROADS CERTAINLY NEED A BOOST IF THEY'RE GOING TO MAKE THIS GRADE AND GET ANYWHERE!
U.S.
WILLIAM C. SEIBEL

From the Albany Knickerbocker Press

Now We're Going Somewhere

Railroad Bill Signed by President Wilson

Railroad Administration Relinquishes Control and Reorganizes Its Greatly Reduced Forces

WASHINGTON, D. C.

PRESIDENT WILSON on February 28 signed the Esch-Cummins bill, which by its terms became effective on March 1, and at the same time issued a proclamation vesting in Director General Hines, who relinquishes his authority over railroad operations, or his successor in office, the powers conferred on the President by the bill, to "adjust, settle, liquidate, and wind up all matters, including compensation, and all questions and disputes of whatsoever nature, arising out of or incident to federal control," except the designation of the agent against whom suits are to be brought arising out of federal control.

On receiving the bill from Congress on Wednesday the President had transmitted it to the Department of Justice for an examination from the legal standpoint. Attorney General Palmer returned it on Friday with an opinion that it contained nothing unconstitutional, and it was then sent to Mr. Hines for a report. Mr. Hines had previously given the President a digest of its provisions, and he returned the bill with his opinion and presumably a recommendation that it be approved.

The transfer of the railroads from the management of the Railroad Administration at 12:01 a. m., March 1, was accomplished without particular incident as far as the Washington headquarters was concerned. The "stroke of the pen" relinquishing the roads corresponding to that by which they were taken over on December 26, 1917, was made on Christmas eve, unless that description more properly applies to the telegram sent by Director General Hines on February 23 to the regional directors giving instructions for notifying the various railroad officers that government operation would cease February 29 and for ascertaining the proper corporate officers to whom they should report after that time. The government did not discharge the railroad officers that have been working under its jurisdiction but proceeded on the assumption that they would be taken back by the corporations unless notice was given to the contrary. In most cases that has been the case although on several railroads some of the men who have been working for the government have been required to look for other positions. In a large number of cases announcements had already been made by the railroad companies of the organization that would take charge on March 1.

On account of the inability to issue annual passes promptly, Director Tyler of the Division of Operation had issued a circular saying that on the return of the roads certain roads would extend the use of the passes issued by authority of the director general until March 31 to enable officers and employees to travel to their new positions, with the understanding that they would not be used by persons not entitled to the use of free transportation. Certain roads, however, refused to honor Railroad Administration passes after March 1.

One of the first things done by Director General Hines on March 1 was to purchase a mileage book, because while the officers of the Railroad Administration left in charge of the liquidation are entitled to free transportation when traveling on official business, they are not authorized to have regular passes.

A considerable number of the Railroad Administration officers who are returning to their former positions or receiving promotions or taking other service had left Washington on Saturday, or earlier, without waiting for the actual transfer of authority or for the announcement that the President had signed the Esch-Cummins bill, which was made Saturday evening. While apparently there was considerable speculation throughout the country as to what the President would do the members of the Railroad Administration staff were left in no uncertainty as to whether the roads would be relinquished in any event. The arrangements for the cessation of federal control had all been made, and Director General Hines bade farewell to those of his organization whom he was not accustomed to see regularly at the dinner given by officers and employees of the administration on Wednesday, February 25. He had also given out on Saturday his report to the President covering the period to March 1 which described some of the work to be done in winding up the affairs of the administration.

On Saturday night and Sunday the remaining offices of the Railroad Administration were moved from the Interstate Commerce building across the street to the Hurley-Wright building.

A large part of the organization of the Car Service Section has been retained by the Car Service Commission of the American Railway Association, of which W. C. Kendall, who has been manager of the section, is chairman.

In Circular No. 99, issued by the director general, the divisions of Traffic and Public Service, as such, were discontinued, effective March 1. Edward Chambers, director of the Division of Traffic, has been elected vice-president of the Atchison, Topeka & Santa Fe, and Max Thelen, director of the Division of Public Service, had been appointed director of the Division of Liquidation Claims. Such portions of the work of the divisions of Traffic and Public Service as remain to be completed after March 1 will be under the direction of the Division of Liquidation Claims.

Max Thelen, director of the Division of Liquidation Claims, announced the following appointments:

Frank McManamy, heretofore assistant director of the Division of Operation, was appointed manager, Department of Equipment. Cyrus B. Stafford was appointed manager, Department of Traffic.

The Committee on Claims will be known as the Advisory Committee on Claims, the Sub-Committee on Claims will be known as the Committee on Claims, and the membership of the Committee on Claims will be as follows: George M. Huss, Division of Liquidation Claims, chairman; E. M. Durham, Jr., manager, Department of Way and Structures, Division of Liquidation Claims; Frank McManamy, manager, Department of Equipment, Division of Liquidation Claims; E. M. Alvord, Division of Liquidation Claims; P. E. Wooley, office of comptroller, and a representative to be appointed by the director, Division of Law.

G. A. Tomlinson, director of the Division of Inland Waterways, has returned to the shipbuilding and grain business at New York.

Joseph T. Young, assistant director of the Division of Operation, has returned to his former position as president of the Norfolk Southern. F. C. Wright, assistant director of the Division of Operation, in charge of the marine department, has taken other service in New York, but will continue to devote some time to the Railroad Administration in connection with the liquidation of steamship property.

W. S. Basinger, assistant director of the Division of Traffic, has been appointed passenger traffic manager of the Union Pacific.

The office of the general assistant to the director general

has been discontinued effective on March 15. H. A. Taylor, general assistant to the director general, has been appointed general solicitor of the Erie. Any duties of the character now performed by the general assistant to the director general which will remain to be performed thereafter will be performed by the assistant to the director general, Brice Clagett.

Thomas H. MacRae, who has been special assistant to the director general of railroads, has returned to Chicago to his former position as managing editor of the Santa Fe magazine and also vice-president of MacRae's Blue Book.

V. P. Turnburke, manager of the Operating Statistics Section of the Railroad Administration, returned on March 1 to his former position as statistician of the Great Northern with office at St. Paul, Minn.

M. E. Towner, manager of the Forest Products Section, has returned to his former position as general purchasing agent of the Western Maryland, and Dr. D. Z. Dunott, chairman of the Committee on Health and Medical Relief, has returned to his former position as chief surgeon of the same road.

Contracts Executed

Director General Hines on March 1 announced the execution of 18 standard compensation contracts, in addition to the 147 that had been previously signed, as follows: Missouri Pacific, $14,312,343; Southern Railway, $19,165,362; Pacific Coast, $114,080; Philadelphia & Reading, $17,094,334; York Harbor & Beach, $5,880; Cincinnati, New Orleans & Texas Pacific, $3,596,924; West Jersey & Seashore, $952,681; Marquette Bessemer Dock & Navigation Company, $19,407; Louisiana & Arkansas, $359,362; Florida East Coast, $2,408,170; New York Connecting, $850,000; Chesapeake & Ohio, $13,888,418; Duluth, South Shore & Atlantic, $562,348; Bath & Hammondsport, $7,221; Central Union Depot & Railway Company of Cincinnati, $114,842; International & Great Northern, $1,596,945; New Orleans & Northeastern, $1,204,992, and Mineral Range Railroad Company, $144,000.

Mr. Hines also signed cooperative contracts with the Trinity Valley Southern and the East Berlin.

Photo Copyright by Underwood & Underwood, N. Y.

The Colors of the 14th Railway Engineers Are Presented to Governor Calvin Coolidge for Preservation in the Massachusetts State House

Continued Severe Weather

THE RAILROADS OF NEW ENGLAND were blocked by ice and snow the last part of last week—from February 25 to March 1—as badly as in the storms of the earlier part of the month, and the delays and difficulties were in some cases worse. The snow banks and the ice of the former storms were still in existence and their volume was increased; and on many miles of railroad, including important main lines, the tracks were obstructed by drifts caused by long continued high winds. Very low temperatures prevailed; Woonsocket, R. I., for example, reporting on Saturday 19 deg. below zero, the coldest morning of the year.

In general, the most important main lines were kept open and passenger trains were delayed hours, not days; but branch lines were closed for days and one main line, that of the Central of New England between Hartford, Conn., and Canaan, was blocked for 48 hours. On this line, near Norfolk, 125 men had to shovel snow and pick ice for about two miles, the snow being from two to six feet deep. In eastern Massachusetts the Boston & Maine has short branches too numerous to mention; and on Saturday thirteen of these (including one or two in New Hampshire and Maine) were running no trains whatever. No attempt was made in that region to run freight trains on any lines, main or branch, for 24 hours and about half the passenger trains were omitted. Difficulties with snow were in many cases complicated by derailment putting main tracks out of business for long sections. Officers of the Boston & Maine said that in some respects the blockade was the worst in their experience.

Shortage of coal in some towns and at many important industries was a serious feature of the freight blockade. The president of the Boston Chamber of Commerce sent out a general call to industries located near the congested railroads to furnish men to help clear side tracks and yards, 3,500 men being asked for. The conditions were threatening, said the call, to stifle the industrial life of the state. The Chamber arranged to furnish shovels and picks for men not provided with them.

The congestion of freight in the freight houses and piers at Boston hampered the discharge of freight from vessels, and five large steamships were compelled to wait several days.

On the New York, New Haven & Hartford in southeastern Massachusetts large areas in yards were cleared of snow by men from neighboring industries, as in the earlier storm. At Providence, R. I., on Saturday, 300 cars, mostly loaded with outgoing freight, were frozen in, the ice being many inches thick. Of 30 tracks in one yard only three were open for service. Through the Providence Chamber of Commerce appeals for help were telephoned to hundreds of industries in and near the city.

At Brockton, Mass., the mayor of the city sent city laborers to dig out coal cars, at the same time assigning 40 teams belonging to the city to assist local coal dealers in making deliveries. On the Winchendon branch of the Boston & Albany the through train leaving Palmer on Monday did not get back until Saturday.

By Monday the Boston & Maine reported great progress toward the restoration of normal movement, about 7,000 men having been engaged in shoveling on Saturday and Sunday, 1,000 of these being employed in the Boston terminal yards, but thousands of freight cars were still frozen in.

On Tuesday, March 2, the Boston & Maine and the New Haven road removed embargoes on freight which had been in effect about four days.

Central New York experienced much difficulty from the same storm that prevailed in New England; and in Syracuse on Friday, February 27, the railroads were reported as "again paralyzed." The Chenango branch of the West Shore was completely tied up.

Postmaster General Objects to New Mail Rates

Asks for Rehearing on Commission's Decision and Postpones Request for Appropriation for Back Pay

THE RAILROADS and the Railroad Administration apparently are destined to be obliged to wait for some time for the benefit of the large increases in rates for the transportation of mail recently ordered by the Interstate Commerce Commission, to be retroactive to November 1, 1916. Some time after March 4, 1921, at which time it is possible that there will be a new postmaster general, is perhaps the best estimate that can be made as to when the money will be available.

The increase has been estimated as amounting to about $22,000,000 for the railroad companies for the service they performed during the 14 months ending December 31, 1917, about $73,000,000 for the Railroad Administration for the period of its operation of the railroads, and about $35,000,000 a year for the railroads for the future. Second Assistant Postmaster General Otto Praeger has placed the amount at $30,000,000 to $40,000,000 a year.

These figures represent the effect of the rates found by the commission to be proper in place of the tentative rates stated in the law of July 28, 1916, and include an increase of 25 per cent specifically to take care of increased operating expenses since January 1, 1918. However, Postmaster General Burleson, or his assistants, have figured out a way to beat the increased cost of operation which might commend itself to many others who are struggling with the high cost of living, were it practicable for them to adopt some of the expedients possible to government business management.

The method proposed by the postoffice department is to ignore the increase in rates, and in the operating expenses of mail transportation on which they were based, until a more convenient time, and meanwhile to ask the Interstate Commerce Commission for a rehearing in the hope that the increase may be reduced. Even if the commission declines to change the decision which it reached after about three years of investigation and which it announced in an opinion of 120 pages, the day of reckoning may be postponed until such time as another Postmaster General may have to be the one to ask Congress for the necessary appropriation. For the time being the department is sparing a Republican Congress the pain of passing so large an appropriation as would be required by the commission's order, while the Democratic Postmaster General is allowed to stand on the record which he made for himself by showing a slight surplus in his last annual report. One difficulty about the arrangement, however, is that a postponement of the settlement may require the Railroad Administration to ask for a slightly larger appropriation to cover its deficit than it would if the readjustment had been made, because the bulk of the back pay is owed by one department of the government to another.

On January 15, the day on which the commission announced its decision (reported in the *Railway Age* of January 23, page 309), the House had passed the postoffice appropriation bill for the fiscal year ending June 30, 1921, which carried an item of $60,000,000 for "inland transportation by railroad routes." As the payment to the railroads for carrying the mail for 1919 was about $54,000,000, it was expected that when the bill went to the Senate the department would have to increase the amount to cover the $35,000,000 increase and also that the $95,000,000 back pay would have to be either included or covered by a supplemental appropriation bill. When no explosion was heard from the room where the subcommittee of the Senate committee on postoffices and post roads was hearing officials of the postoffice department testify in explanation of the various items in the bill, some curiosity was aroused. The hearings were in executive session, but printed reports of the testimony since made public reveal the cause for the absence of the expected commotion. The department made no change in its figures.

Otto Praeger, second assistant postmaster general, in charge of the railway mail service, appeared before the subcommittee on February 9 and when pressed by senators as to why he could not trim the $60,000,000 to perhaps $59,000,000, he said, according to the printed record:

"That does not take into consideration the increase in rates that the commission *may fix.*"

Mr. Praeger is not responsible for the italics. They are used because the commission's decision was issued on January 15.

"Have you estimated what that increase would cost you on the basis of the business done this year?" asked Senator Townsend, chairman of the subcommittee.

"Between $30,000,000 and $40,000,000 a year," replied Mr. Praeger. "The postmaster general is preparing a motion for a rehearing on those rates, and until that is determined, and until the commission determines whether or not they will grant a rehearing and go into certain phases of the case that the department will point out, we are not getting ready to make payment to the railroads of the increases. We do not accept the rates as definitely settled until the commission disposes of the motion for rehearing. Then we will get into the work of restating the service on the new rates. Naturally when that is done we will have to come to Congress and ask for a deficiency appropriation to pay the railroads." He added that the estimate of appropriation was made on the basis of the present rates and a slightly increased service.

The commission's order, except as to the retroactive payments, was made effective, as of March 1, 1920, and the department has issued a booklet of orders and instructions purporting to put it into effect, which the attorneys for the Railway Mail Pay Committee have contended, in a petition to the Interstate Commerce Commission, are in conflict with the order. According to the petition, which was noted in last week's issue, the department's instructions continue the former practice, which the commission held was unjust, of saving money at the expense of the railroads by reducing the authorization of mail space in a train as it progresses and as mails are thrown off, regardless of the inability of the railroad to reduce the number or size of the mail cars. The booklet also includes a table of the rates prescribed by the commission. If the commission should render an adverse decision on the motion for a rehearing, which was filed on March 1 by Joseph Stewart, special assistant to the attorney general for the postmaster general, the department will have another move to make in the way of "restating the service," as mentioned by Mr. Praeger.

Something like the tactics employed by the department seems to have been anticipated by counsel for the short-line railroads while the case was before the commission. The commission's report says that they contended that it had power to direct the postmaster general to pay reparation to certain railroads, but the commission said: "When we have made finding, any questions with respect to readjustment of payment rest, under the law, with the postmaster general. We have no jurisdiction in this proceeding to award reparation to any railroad as the result of our findings."

Mr. Stewart on behalf of the postmaster general petitioned

for a re-hearing and for a revised finding as to the fair and reasonable rates for the transportation of the mail and submitted the following points on which it is contended the Interstate Commerce Commission has decided erroneously:

First. That in charging to the mail service a proportion of the unauthorized, excess, and unused space and operation in full railway post-office cars and full storage mail cars the commission assigned to the mails the entire number of car-foot-miles involved, 32,000,000; whereas if the original assignment of the department be not followed, the amount should be divided between the passenger service and the mail service on the ratios of 87.84 per cent and 12.16 per cent, respectively.

Second. That in charging to the mail service a proportion of the unauthorized, excess, and unused space in combination and mixed cars, the commission divided the whole of such space and operation between the passenger, express, and mail services according to the ratios shown by the used space in the other than full cars (the authorized space being counted as the used space in the case of the mail); whereas such space should be divided between the three services named according to the ratios shown by the used space in the baggage end alone of the mixed cars (the apartments being excluded from consideration here).

Third. That in reaching the basic amount of estimated cost and return chargeable to the mails the commission computed a specific rate per cent of return on the unchecked and unproved value of investment in road and equipment reported by the railroads; whereas such reported value should be used only for comparing the estimated rates of net returns from the several services.

Fourth. That in dividing investment in road and equipment between the passenger, express, and mail services, the commission divided the value assigned to the passenger service, as a whole, between the passenger, express, and mail services on general car-foot-mile ratios; whereas the division of road value should be made on the basis of various operating-expense ratios, and the division of equipment value on the basis of allocations where reported by the railroads, and various car-foot-mile ratios for the residue.

Fifth. That in computing the amount of return allowed on investment charged to the mails the commission allowed 6 per cent; whereas—

(*a*) On the commission's basis applied to passenger service on the theory of dividing all passenger value of road and equipment on car-foot-mile ratios and charging 78.06 per cent of all space to the passenger service and 8.29 per cent to the mail service, the railroads realized only 5.738 per cent return on passenger service; and

(*b*) On the commission's basis applied to passenger service on the theory of dividing all passenger value of road and equipment on car-foot-mile ratios and charging 77.96 per cent of all space to the passenger service and 7.46 per cent to the mail service, the railroads realized only 5.745 per cent net return on passenger service; and

(*c*) On the commission's basis applied to passenger service on the theory of dividing all passenger value of road and equipment on car-foot-mile ratios and charging 78.11 per cent of all space to the passenger service and 7.31 per cent to the mail service, the railroads realized only 5.734 per cent net return on passenger service; and

(*d*) On the department's basis applied to the passenger and mail services on the theory of dividing all passenger value of road on various operating-expense ratios and passenger value of equipment according to direct allocations where reported by the railroads and on various car-foot-mile ratios for the residue, the railroads realized only 5.484 per cent net return on passenger service; and

(*e*) On the commission's basis applied to express and mail services on the theory of dividing all passenger value of road and equipment on car-foot-mile ratios and charging 13.65 per cent of all the space to the express service and 8.29 per cent to the mail service, the railroads realized only 2.524 per cent net return from the express service; and

(*f*) On the department's basis applied to the express and mail services on the theory of dividing all passenger value of road on various operating-expense ratios and passenger equipment according to direct allocations where reported by the railroads and on various car-foot-mile ratios for the residue, the railroads realized only 2.941 per cent net return from the express service.

Sixth. In reaching the basic aggregate amount of pay which was considered warranted as of March 27, 1917, the commission evidently determined upon a basis of $80,450,302 for the entire service reduced to $75,191,065, being the amount produced by the application of the specific rates provided for; whereas—

(*a*) If the mails were charged with the same rate of return on estimated value of investment as the railroads received as net return from passenger service on the same theory of division of value as the commission used, and the cost estimate be based on the same division of space as the commission allowed (78.06 per cent to passenger and 8.29 per cent to mail) the amount would have been $74,413,426.

(*b*) If the mails were charged with the same rate of return on estimated value of investment as the railroads received as net return from the passenger service, on the same theory of division of value as the commission used and the cost estimate be based on a division of space (77.96 per cent to passenger and 7.46 per cent to mail) the amount would have been $67,247,864.

(*c*) If the mails were charged with the same rate of return on estimated value of investment as the railroads received as net return from the passenger service, on the same theory of division of value as the commission used, and the cost estimate be based on a division of space (78.11 per cent to passenger and 7.31 per cent to mail) the amount would have been $65,904,320.

(*d*) If the mails were charged with the same rate of return on estimated value of investment as the railroads received as net return from passenger service, on the theory of a division of value by direct allocation and the use of operating-expense and car-foot-mile ratios as used by the department, and the cost estimate be based on the division of space used by the commission (78.06 per cent to passenger and 8.29 per cent to mail) the amount would have been $69,220,750.

(*e*) If the mails were charged with the same rate of return on estimated value of investment as the railroads received as net return from passenger service, on the theory of a division of value by direct allocation and the use of operating-expense and car-foot-mile ratios as used by the department, and the cost estimate be based on a division of space, 77.96 per cent to passenger and 7.46 per cent to mail, the amount would have been $64,266,141.

(*f*) If the mails were charged with the same rate of return on estimated value of investment as the railroads received as net return from passenger service, on the theory of a division of value by direct allocation and the use of operating-expense and car-foot-mile ratios as used by the department, and the cost estimate be based on a division of space, 78.11 per cent to passenger and 7.31 per cent to mail, the amount would have been $63,377,517.

(*g*) If the mails were charged with the same rate of return on estimated value of investment as the railroads received as net return from the express service, on the same theory of division of value as the commission used, and the cost estimate be based on the same division of space as the commission used, 13.65 per cent to express and 8.29 per cent to mail, the amount would have been $63,995,075.

(*h*) If the mails were charged with the same rate of return on estimated value of investment as the railroads received as net return from the express service, on the same theory of

division of value as the commission used, and the cost estimate be based on a division of space, 14.58 per cent to express and 7.46 per cent to mail, the amount would have been $57,819,491.

(*i*) If the mails were charged with the same rate of return on estimated value of investment as the railroads received as net return from the express service, on the same theory of division of value as the commission used, and the cost estimate be based on a division of space, 14.58 per cent to express and 7.31 per cent to mail, the amount would have been $56,711,657.

(*j*) If the mails were charged with the same rate of return on estimated value of investment as the railroads received as net return from the express service, on the theory of a division of value by direct allocations and the use of operating-expense and car-foot-mile ratios as used by the department, and the cost estimate be based on the division of space used by the commission, 13.55 per cent to express and 8.29 per cent to mail, the amount would have been $65,362,189.

(*k*) If the mails were charged with the same rate of return on estimated value of investment as the railroads received as net return from the express service, on the theory of a division of value by direct allocations and the use of operating-expense and car-foot-mile ratios as used by the department, and the cost estimate be based on a division of space, 14.58 per cent to express and 7.46 per cent to mail, the amount would have been $58,945,180.

(*l*) If the mails were charged with the same rate of return on estimated value of investment as the railroads received as net return from the express service, on the theory of a division of value by direct allocations and the use of operating-expense and car-foot-mile ratios as used by the department, and the cost be based on a division of space, 14.58 per cent to express and 7.31 per cent to mail, the amount would have been $57,913.775.

Seventh. In distributing the average or general unit rate to the several units of service the commission has unduly increased the rates for the lesser units and has not maintained their true relations.

Eighth. In allowing differentials to the short-line railroads the commission has defined them as "separately operated" instead of "separately owned and operated."

The petition also includes an elaborate brief regarding these contentions presented to the commission "in the belief that they warrant careful consideration and favorable action to the end that a more equitable adjustment of the basic rate may be reached and the space basis system further perfected." It is contended that in the matter of rates between the railroads and the post office department the mails should not be made to pay more per unit of service than the railroads voluntarily contract with the express companies to receive from them for a like service, and that on this basis the gross amount would not exceed $57,913,775 for the service as of March 27, 1917, based on all the mail service.

TROTSKY'S TRAIN DE LUXE.—The following account of Trotsky's special train is given by a Russian refugee who has reached Finland: The special train consists of 14 cars and two powerful engines. It is supplied with a wireless installation capable of receiving communications from Nauheim, Lyons, and London. As soon as the train arrives at a station it is at once connected with the telephone system. The wireless telegraph works night and day. One of the most interesting fittings of the train is a printing office which prints Trotsky's paper *On the Way*. The greatest curiosity, however, is the car of the Imperial garage, which contains six motor-cars, one of them a French car which belonged to the Tsar. The escort on the train consists of 250, i. e., a whole company of machine gunners, as Trotsky, with his train, has often been near the front. The train also contains a library and a dining car.—Times (London).

Short Lines Approve Railroad Bill

THE AMERICAN SHORT LINE BULLETIN, issued by the American Short Line Railroad Association, Washington, publishes the following regarding the Esch-Cummins bill which became a law on March 1, under the head "A Great Victory. The Stone Which the Builders Rejected Has Become the Head of the Corner":

"The bill contains many provisions for the benefit of short lines and weak railroads, which were prepared and advocated by the American Short Line Railroad Association.

"Congress has thus again acted in a way to do justice to that class of railroads that originate and transport a very substantial per cent of the raw material and agricultural products of the country.

"This action of Congress is not only a vindication of the legislative branch of the government but it a very great victory for the short line railroads that were illegally and unfairly rejected by the Railroad Administration and deprived of the rights conferred upon them in Section 1 of the federal control act of March 21, 1918.

"Notwithstanding the law thus enacted, the Railroad Administration refused to recognize the rights of the short line railroads; refused to include the great majority of them in federal control, and announced its intention of relinquishing them. Thereupon, Congress at the end of June, 1918, responded to the urgent request made in behalf of such excluded short line railroads by the American Short Line Railroad Association, and passed a joint resolution specifically providing that the class of roads described in the foregoing quotation, should be included as a part of the railway system under government control. While Congress was acting upon the joint resolution, the general counsel of the Railroad Administration was frantically engaged in issuing orders of relinquishment. President Wilson vetoed that joint resolution and made promises of fair and just treatment to the short line railroads that had been relinquished, which have never been fulfilled except to a limited extent.

"The American Short Line Railroad Association fought vigorously in its attempt to have the Railroad Administration do justice to the short and weak railroads, and comparatively speaking, accomplished a great deal for such roads. The campaign was so conducted as to finally overcome the prejudice and antagonism of the Railroad Administration to the extent that during the past year the director general and the great majority of his principal assistants have become warm friends and have desired to do justice to the short lines so far as it was within their power.

"The American Short Line Railroad Association has conducted a most vigorous campaign in behalf of the short lines before the present Congress. It has prepared and Congress has adopted a number of important amendments which will aid greatly in stabilizing short line railroads throughout the country in the future. The Association has demonstrated to Congress that very great injustice was done short lines as a result of their exclusion from federal control. It has shown that the actual losses of the 171 short lines whose operating losses, including taxes, were greater in the year 1918, showed an increase of 474 per cent as compared with their average losses during the standard test period.

"The American Short Line Railroad Association has not only won a great victory for the short lines but it has been very helpful in obtaining legislation that is necessary and beneficial for the entire railroad transportation system of the country. The association has recognized that the short lines could not be prosperous unless the main lines were placed in a healthy condition.

"Owners of short line railroads will find much cause for congratulation in the provisions of this new law.

Congress has shown a high appreciation of the needs of the short and weak roads, and has courageously incorporated all

of the important provisions requested by the American Short Line Railroad Association.

"One of the most important features and at the same time one as to which we have some doubt is Section 422, which requires the commission to establish the rate level for the first two years after federal control, so that the revenues of the railroads as a whole shall be a sum equal to 5½ percentum of the aggregate value of all the roads. We cannot bring ourselves to believe that a rate level fixed on this basis, and the strong roads left to get all they can in excess of the percentage fixed, will leave enough to safeguard the weak and short roads. We hope the commission as well as the public will see the necessity of making such a change in the rate level from time to time, and such a change in the law with regard to the distribution of the general volume of traffic as that each and every railroad necessary to be continued in the public interest, will be regenerated and made an efficient unit in the general transportation machine.

"The problem of sustaining the weak roads through a rate level which will not allow the strong roads too much, must find its ultimate solution in the consolidation of the railroads of the continental United States into a number of systems as provided for in Section 407 of the Bill, which requires the commission as soon as practicable to prepare and adopt the plan for such consolidation. This feature of the new law is one of paramount importance and the largest possibility to the short line roads. The short lines, through this association, must and will urge the Interstate Commerce Commission to create, at the very earliest date practicable, a department or division for the special consideration of a plan for consolidation, and that representatives of the short line railroads as a whole would be permitted to co-operate with the commission in working out this matter of such tremendous moment to the railroads and the commerce and industry of our common country. This is one of the big things which may be accomplished for the short line railroads through continued co-operation.

"We feel that private operation of the railroads is on final trial. The Interstate Commerce Commission is vested with responsibility and burdened with duty such as was never laid upon any set of men in the history of the world. We feel that members of the commission will realize this responsibility and will welcome co-operation on the part of railroad organizations and managements. Our hope is that the people of the United States, who are certainly opposed to government ownership, will be patient until the constructive features of the new law shall have been put into practice and such imperfections as may exist completely demonstrated and ultimately cured by additional legislation. The public should be taken constantly into the confidence of railroad managements. The public should be given to understand the difficulties that confront the roads and the commission, and which will continue to disturb and distress commerce and industry until normal conditions shall have been restored.

"Considered as a whole, the Cummins-Esch railroad bill is, in our opinion, one of the most excellent pieces of constructive legislation yet passed by the American Congress. What has been written into this law for the protection of short line railroads is due entirely to organized effort. The needs of these properties have been forcefully and persistently presented to Congress. As we have heretofore said, we again repeat, the troubles of the railroads are not yet ended. This new law must be construed and put into practice. Amendment will probably be required in order to perfect it. Labor has vigorously opposed its passage and may be expected to earnestly attempt to repeal or emasculate it. The need for continued co-operation on the part of the railroads will be greater in the immediate future than it has been in all the past.

"We cannot close this article without again calling this fact to the attention of our readers and urging every short line railroad to unite with us in the work we are doing for the protection and preservation of all of the railroads of our country."

The bulletin also publishes the following:

It has turned out as we had expected,
That the short lines John Barton rejected,
Have come back to stay,
In a definite way,
And by wise legislation protected.

Material Handling Machinery Manufacturers' Association

THE ANNUAL MEETING and convention of the Material Handling Machinery Manufacturers' Association was held in the Waldorf-Astoria, New York, February 26 and 27, 1920. The program provided for a business session on the morning of the first day, followed by a luncheon and the presentation and discussion of papers in the afternoon. On Friday morning the advertising managers of the manufacturers of mechanical handling machinery held an advertising council assembly at which A. J. Barnes of the Shepard Electric Crane & Hoist Co., Montour Falls, N. Y., presented data covering a recent survey of the field made to ascertain the potential and actual demand for industrial units in the industrial field for industrial trucks, tractors, lift trucks, industrial locomotives, portable conveyors and detached electric hoists.

Another paper by E. R. Davis, advertising manager, General Electric Company, Schenectady, N. Y., outlined the need for an encyclopedia correlating material handling machinery, and the information was disclosed that arrangements had been made by the Simmons-Boardman Publishing Company, New York, to produce such a volume to cover the field of cranes, conveyors, elevators, escalators, stacking machines, industrial trucks, motor trucks, transfer tables, turntables, industrial locomotives, and combinations of these units as well as steam, electric and gasoline power units as applied to the industry.

The afternoon session on Friday was devoted to the presentation and discussion of papers of general interest to the industry. A paper of special interest to railroad men was presented by B. E. Fitch, president of the Motor Terminals Company of New York and Cleveland. It discussed the application at Cincinnati, O., of electric overhead traveling cranes and electrically operated hoists in combination with demountable truck bodies or containers, used with motor trucks for handling interline l. c. l. freight interchange between all the railroads of that city and sub-stations of each road. An abstract of Mr. Fitch's paper is published elsewhere in this issue.

Following is the list of the board of governors elected for the year 1920-21. (At a meeting during March this board will formally elect a president, vice-president and treasurer, and secretary to serve for the coming year): F. W. Hall, Sprague Electric Works, New York; H. W. Standart, Northern Engineering Works, Detroit, Mich.; J. C. Walter, Alvey Ferguson Company, New York; W. F. Merrill, The Lamson Company, Boston, Mass.; R. W. Scott, Otis Elevator Company, New York; D. V. Jenkins, Watson Elevator Company, New York; L. C. Brown, Elwell Parker Electric Company, New York; R. Owens, Lakewood Engineering Company, Cleveland, Ohio; F. Stadelman, Wellman, Seaver, Morgan Company, New York; T. Robins, Robins Conveying Belt Company, New York; G. O. Helmstaedter, Hyatt Roller Bearing Company, New York, and G. W. Miller, Jeffrey Manufacturing Company, Columbus, Ohio.

Employing Motor Trucks in Trap Car Service*

Use of Street-Going Vans at Cincinnati Effects Reduction in Rail Terminal Congestion

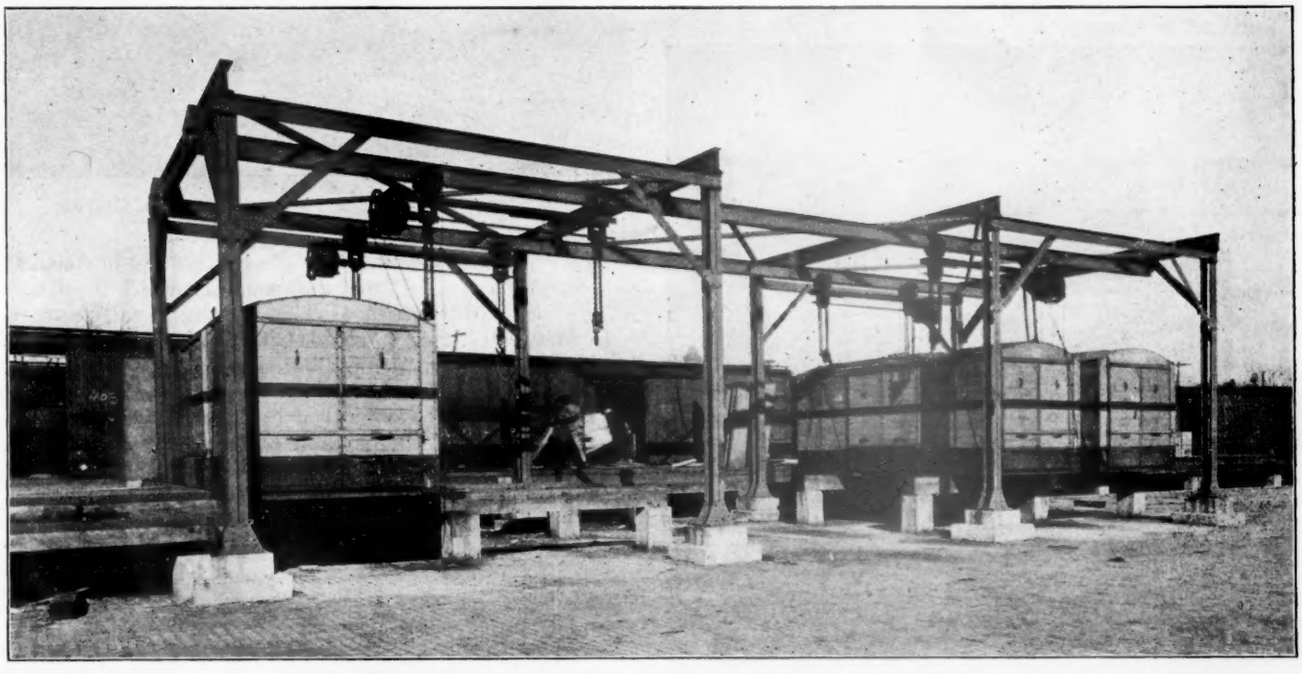
By B. F. Fitch
President, Motor Terminals Company, New York.

THERE IS PRACTICALLY no limit to what the rails will carry, if cars, when consolidated in trains, are at once started and kept continuously moving; therefore, it is logical to charge inadequate terminal facilities with the major portion of the box car's tonnage deficiencies. Inadequate terminals alone are not responsible for this nor can either the railroads or the public be censored for using box cars illegitimately in lieu of other facilities for short-term storage. The prime trouble is that, as an operating necessity, in absence of other facilities, box cars have been assigned to a service for which they were never intended, and this makeshift usage has complicated switching interchanges at all terminal points to the detriment of high mileage efficiency of all cars.

Our national transportation practice and trade influences of the traffic do not permit of any radical terminal changes. Any revolutionary attempts along this line might embarrass our production resources as greatly as a change in the monetary basis. Therefore, evolutionary improvements only can be considered. To demonstrate the fact that railroad transportation has outgrown railroad terminals, it is interesting to note that from outer classification yards to pier station delivery at New York the cost to carrier is not less than $3.50 per ton and, similarly, at Philadelphia, not less than $2.50 per ton, or a joint terminal cost of $6 per ton. Whereas, the main line haul between these two terminals, if estimated at a maximum cost of 6 mills per ton mile, suggests a transportation cost of 60 cents versus terminal costs of $6.

With unlimited financial resources the engineering talent of the country can quickly solve the problem. Ideal joint terminals at a cost of $50,000,000 to $500,000,000 are possible in all of our principal centers, but who will assume the responsibility of such abnormal financing? Each present terminal layout must be continued substantially as at present. Conservatism recommends no radical changes, but demands evolutionary changes to bring about better conditions.

Despite opportunity for improvements, the industrial trap car and the intro-terminal trap car will apparently always complicate terminal interchanges to the detriment of switching refinements. Terminal operating economies will be in direct ratio with the decrease in the number of interchange switching combinations. So apparently new freight stations at huge investment are no guarantee of great reductions in terminal expense, because freight station labor cost is but a small item as compared with total terminal expense.



General View of Baltimore & Ohio Norwood Sub-station

In any city with seven non-competing railroads radiating to different sections, each line receives daily some freight for each of the six connections. Numerically, this means 42 cars in transit to and 42 cars in transit from, a total of 84 cars. But due to yard interchange delays these cars average a third day arrival instead of a second day arrival; hence, 252 cars are assigned daily to such service. Thus 75,600 car days are required annually.

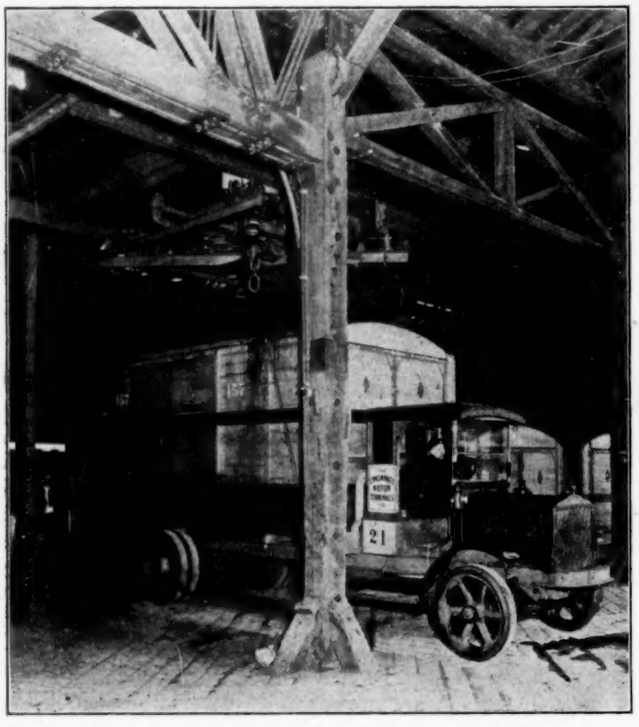
Industrial expansion at any city with seven initial lines, has, as a rule, outgrown station facilities and railroads for economy's sake have strategically established sub-stations

*Abstract of a paper read at a meeting of the Material Handling Machinery Manufacturers' Association, Waldorf-Astoria, New York, February 26, 1920. A brief description of this installation was also given by Zenas W. Carter, secretary of the Material Handling Machinery Manufacturers Association, at the November meeting of the New York Railway Club. (See *Railway Age*, November 7, 1919, page 922.)

along their rights-of-way as traffic influences for shipments from outlying districts. Since all the freight from these outlying districts has to be brought to the main stations to be consolidated in cars for despatch from such main stations to destination points, and since all of the freight for these sub-stations comes out of main station cars on arrival, trap cars are necessary in this main sub-station service of each line. The number of cars so used is a multiple of the number of stations. If each of the seven lines has three stations, 42 cars are required, the movement delays to which are as great as connecting line cars; therefore, the wasting of an additional 37,800-car days.

This explains one of the reasons for car shortage and an operating abuse which has been obsoleted by the success of a motor terminals installation at Cincinnati, Ohio. Briefly, this installation consists of overhead rails, electric cranes, electric hoists, motor trucks and a plurality of interchangeable motor truck bodies. The system of operation requires an empty body for each station movement demand of railroad on its inbound main station platform. At the larger stations there are several locations for such body settings, thereby decreasing the trucking distance for freight. As the freight comes from the cars, it is trucked to the nearest location containing a body carded for any connection or any sub-station.

When loaded, these bodies are sealed and under telephone order of a joint despatcher, employed by the railroads, mechanically loaded onto trucks and thus rested over the city streets to a connection. On arrival at the outbound



Chesapeake & Ohio Inbound Station at Fourth Street

platform of the connecting line, the body is mechanically removed and an empty body, previously unloaded, is put onto the motor truck chassis for delivery to the inbound platform of that house, where the operation is repeated and another loaded body is forwarded in the same manner to some other freight house.

If the load happens to be to a sub-station, it remains on the platform until the despatcher is advised by the agent at the sub-station that a return load is available. Then the loaded body of inbound freight to that sub-station is forwarded and the motor truck exchanges it for the previously reported load of outbound freight to be delivered at the main station, where it is consolidated with other city freight in line cars made up daily to other destination points.

It is evident that all freight, except possibly the portion arriving during the last hour of the station operating day, whether between main and sub-stations or between main stations of the various railroads, is currently loaded and hauled out of the terminal. Previously, the movement of this freight by trap cars suffered an average of three days delay and the shuttle movement of these individual cars over

C. C. C. & St. L. Central Avenue Outbound Station

terminal rails interfered with the group movement of complete cuts of station cars. Hence, the congestion which previously made Cincinnati notorious as a check-valve in rail routings.

In May, 1917, the Cleveland, Cincinnati, Chicago and St. Louis permitted a test installation between its five main and sub-stations. The innovation was an early success, but the other roads were skeptical of its enduring efficiency. In the early months of 1918 a special committee was appointed to analyze the entire terminal and, based upon Big Four accomplishments, recommend what economies and benefits could be anticipated from completely motorizing Cincinnati's terminal. The summary of this comparative report prophesied the following:

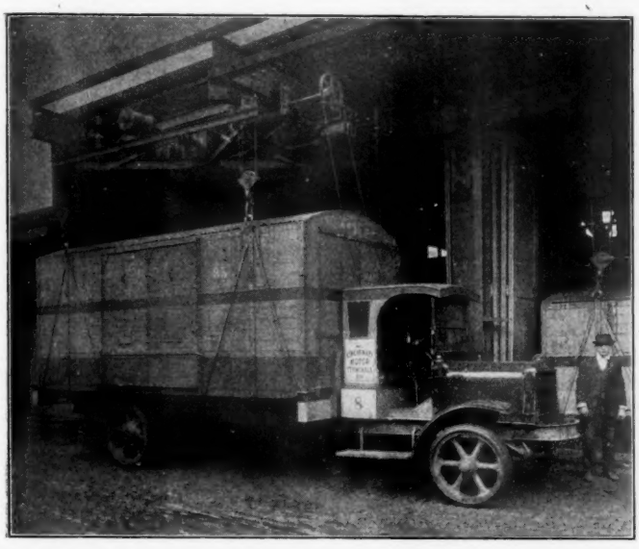
Annual economy, $61,653.
Advance in movement of freight, 52.4 hours.
Increase in inbound platform floor area, 14.8 per cent.
Increase in outbound platform floor area in ratio with station operation.
Increase in main station trackage, 21.4 per cent.
Increase in main station realty, 122,660 sq. ft.
Release of 66,862 cars for line service, per annum.
Extension of present labor, 30.4 per cent.
Eliminating the rehandling of 86,976 tons of freight, lessens railroads liability of loss and damage.

In 1919 equipment orders were entered and railroads commenced station changes and superstructure construction, but the terminal is not yet fully equipped, because of delays. However, in recent analysis of accomplishments it is proven that, due to increased operating costs of railroads, the prophesied 17.1 cents per ton economy is in practice actually a saving of 35.2 cents per ton and, therefore, the annual economies will be $126,508 instead of $61,653.

This service has proven that all widely distributed station facilities can be laced up as a unit without investment cost

to the railroads, thereby giving to each and every terminal the benefits of a union freight station. The rates paid for the service are less than what interest charges alone would be on the cost of constructing a consolidated terminal. The operating program of railroads and the established perquisities of shoppers are in nowise disturbed, but the railroads at large through the influence of this current versus their past interrupted movements enjoy an increase of terminal rail, station rail and station platform facilities. This increase can be perpetually extended at minimum investment, in ratio with increasing tonnage demands, which naturally will accrue at any industrial city enjoying better shipping facilities.

Extensions are now possible in the form of rail sub-stations or off-track warehouse sub-stations by this system, and can be gradually provided as the tonnage demands warrant.



Louisville & Nashville East End Freight House—Outbound Side

There is no necessity to finance elaborate facilities to take care of accruing demands which may not develop for 50 years.

What has been done at Cincinnati can be adapted to the varying demands of al principal terminal cities. The flexible possibilities of trucks are now clearly defined for industries having transportation facilities dependent upon rail extensions. Opportunity at each point are limited only to intelligent installations following detail analysis to establish the greatest terminal deficiencies of a carrier to meet the shipping demands of the public.

The accomplishments at Cincinnati warrant a study of the system as applied to the greatest terminal problem in the world, New York. At present the railroads monopolize approximately 30 per cent of Manhattan's piers for freight stations. Where not individually owned, the rental value of piers is out of all proportion with freight tariff returns, but a few blocks inland, realty enjoys but a fraction of bulkhead rental values. If inland joint stations, in say 12 zones, were constructed on this otherwise comparatively non-productive realty, the railroad piers could be released for shipping and station facilities could be attained by the railroads at practically no cost, because of increased rentals possible for warehouses and industrial floors above joint freight terminals.

If all roads contributing this terminal had transfer stations at their rail bulkheads or a few blocks back from the valuable waterfront of Jersey City, Staten Island and Bronx, carload and less than carload package freight could be immediately transferred from cars to motor truck bodies, which would be designated for each of these inland stations, and the freight cars thereby released for immediate reloading of outbound freight. These bodies, when loaded on trucks, would be routed over streets to the nearest available Staten Island or Jersey slip for ferrying to the Manhattan slip nearest the inland station destination, and vice versa on the return movement.

The inland station investment is a realty venture requiring no financing on the part of the railroads, because assured rental returns from upper stories will invite outside capital to furnish the station facilities in ever increasing numbers as fast as the railroads desire to contract for the use of such. In short, the motor truck, reinforced by this system, offers an opportunity to convert present transportation losses into profits for both carriers and shippers, and this opportunity does not suffer the handicap of engineering problems and long construction delays.

It is an immediately available asset, the adoption of which is not entirely dependent on concerted action by the railroads. The initial installation at Cincinnati has demonstrated the possibility of capitalizing existing economic terminal losses to the mutual benefit of all interests.

Interstate Commerce Commission Interprets Transportation Act

THE INTERSTATE COMMERCE COMMISSION on March 1 issued the following notice to carriers giving an interpretation of that section of the new transportation act designed to continue in effect until changed by proper authority the rates in existence at the expiration of federal control:

Section 208(a) of the transportation act, 1920, just enacted, provides that all rates, fares and charges and all classifications, regulations and practices which in any wise change, affect or determine any part of the aggregate of rates, fares or charges or the value of service rendered, which on February 29, 1920, are in effect on the lines of carriers subject to the interstate commerce act, shall continue in force and effect until thereafter changed by law, but that prior to September 1, 1920, no such rate, fare or charge shall be reduced, and no such classification, regulation or practice shall be changed in such manner as to reduce any such rate, fare or charge unless such reduction or change is approved by the Interstate Commerce Commission. The prohibition against reduction of such rates, fares or charges, or effecting such reduction by change in classification, regulation or practice prior to September 1, 1920, without approval of the Interstate Commerce Commission is mandatory and unqualified. The interpretation or effect of the provision for other charges "pursuant to authority of law" is open to interpretation and differences of opinion might arise relative thereto.

If the commission has entered an order in a formal case effective on a date subsequent to February 29, 1920, it is the duty of the defendants in that case to comply with that order; and changes made and filed responsive to that order will be "pursuant to authority of law."

If a schedule has been filed providing for a change or changes in interstate rates, fares, charges, classifications, regulations or practices, effective on a date subsequent to February 29, such changes, if not suspended by the commission, will become effective "pursuant to authority of law," except such as may reduce the charges for the service and as to which the commission's approval has not been secured.

If any proposed reductions which have not been approved by the commission have been filed to become effective subsequent to February 29, 1920, the law above referred to renders them unlawful. It will, therefore, be necessary to eliminate them from the schedules or secure the commission's approval

thereof on or prior to the effective date. Elimination of them from a schedule should be effected by prompt issuance of a supplement to, or reissue of, the schedule, and this wherever possible should be done before the effective date of the schedule. If it is impossible to do this before the schedule takes effect it should be done as promptly as possible thereafter, and in consideration of the unusual situation created by the law referred to the restoration of the rate or charge that was in effect on February 29 should be made retroactively effective as of February 29 or as of the effective date of the reduction if that date is later than February 29. Supplements to or reissues of schedules for the purpose of so restoring the rates or charges that were in effect on February 29 and containing no other change may be made effective without notice, because they simply correct in an orderly way that which was proposed in accordance with the law as it existed when the change was filed but which has by subsequent legislation been made unlawful. Such a supplement to or reissue of a schedule must bear an effective date which, as before stated, may be made retroactive and should bear on its title page a notation, "Effective ———————— and filed on less than statutory notice in order to bring the tariff into conformity with section 208 (a) of the transportation act, 1920."

Changes in intrastate rates, fares, charges, classifications, regulations or practices filed with the commission and not effective on or before February 29 are not "pursuant to authority of law." The jurisdiction over intrastate rates, etc., passed to the state regulating authorities at 12:01 a. m. March 1, 1920, with the limitation above referred to that such rates, etc., shall not be reduced prior to September 1, 1920, without the approval of the Interstate Commerce Commission, and subject further to the provisions of section 13 of the act to regulate commerce as amended by section 416 of the transportation act, 1920.

Changes in fares for the purpose of establishing round-trip excursion fares for specific limited periods of time and between specified points are hereby approved if filed in accordance with the provision of tariff circular 18a.

Reductions in rates, fares or charges made for the purpose of bringing them into conformity with the requirements of the fourth section of the act, and filed on lawful notice, are hereby approved.

Section 208(a) of the transportation act, 1920, prohibits the reduction of a rate or charge prior to September 1, 1920, unless such reduction is approved by the commission. Section 418(5) of the same bill places upon carriers the duty of unloading live stock into suitable pens at public stock yards and, with certain exceptions, en route, without extra charge therefor to the shipper, consignee or owner. The provision in section 208(a) appears to be fundamental and controlling, but it is clearly the duty of carriers to bring their tariffs of charges applicable to shipments of live stock into conformity with the provisions of section 418(5) at the earliest possible date.

Reductions in rates or charges for the purpose and to the extent necessary to bring the tariffs into conformity with section 418(5) are hereby approved.

The commission has also issued fourth section orders authorizing the carriers to continue until September 1, 1920, all rates, fares and charges established by the Railroad Administration which without having been authorized by the commission will be in violation of the fourth section of the act to regulate commerce, provided that in instances in which applications for authority to continue any of the rates are filed with the commission on or before June 30 the rates covered by such application may be continued until they have been passed upon by the commission. Applications for authority to continue the aforesaid rates shall state when and in what tariffs they were established, to what extent they are in contravention of the fourth section and similar information.

This order is said to be necessary, because while the railroads were under federal control certain rates were established in contravention of the provisions of the fourth section as it is applicable to the carriers under private ownership, and the commission considers that a reasonable time should be allowed to bring them into conformity with the fourth section or to make applications to the commission for relief. In another order the commission directs that rates in existence prior to the effective date of General Order No. 28 of the director general of railroads which were not in accord with the provisions of the fourth section but were at that time or are now authorized by specific orders of the commission or protected by applications not yet passed on, may be continued as increased by the director general's order without observing the provisions of the amended fourth section.

No Honey Until the Bees Go to Work

W. G. Besler, president and general manager of the Central of New Jersey, resumes charge of the operation of the road with a greeting to officers and employees, reading in substance as follows:

For the past 20 years we have lived and worked together, shared our joys and sorrows, practically as one family. Mere money paid in compensation for a day's service rendered is not, indeed, all that is to be desired in connection with one's employment. The happiness that comes with the knowledge of permanency in the matter of position, of stability and regularity of employment, and upon which may be based a confidence and dependence in one's ability to meet the necessary family expenditures, as well as the practice of thrift, is of equal or greater importance. And even above these are the elements of existence which make life worth while living; a spirit of confidence and co-operation, of mutual respect and sympathy between employer and employee, a realization by the employee of the interest of the employer, and the real joy, which comes to every rightly constituted person, of work well performed.

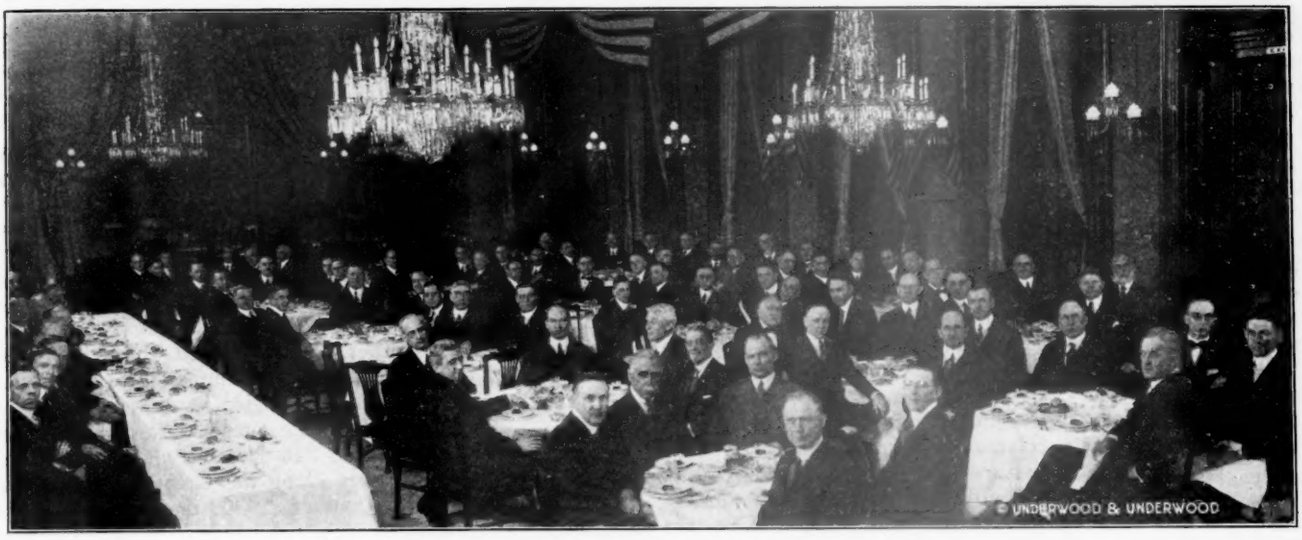
These relationships between employer and employee are of really greater concern in our every-day life than the measure of dollars and cents in our pockets. The practice of them is an assurance and guarantee of "a fair day's pay for a fair day's work," and a square deal.

The spirit of unrest is with us. The situation as I see it is like a swarm of bees that has left its hive and is buzzing around without apparent order or accomplishment until it is finally gathered once more into its hive, where each bee knows its individual place, and instinctively it starts to work in orderly and constructive fashion in the matter of production—sufficient for its own needs and a surplus for the use and enjoyment of mankind. There are drones among the bees, but the workers drive them forth and sting them to death.

There is no honey until the bees go to work!

As your president and general manager, and as the head of this great family, I call upon each and every member thereof to assume his or her place in the organization, with the certain knowledge that your interests and welfare shall be scrupulously safeguarded and your efforts justly rewarded, and I call upon you from past experience to bear witness to the mutually beneficial results that have accrued during the many years of our association.

With this assurance, let us dismiss unrest and its accompanying confusion, and once more come together and recreate that *esprit de corps* which has always been so characteristic of the service of the Central Railroad of New Jersey.



Railroad Administration Staff at Farewell Dinner, New Ebbitt Hotel, Washington, D. C., February 25, 1920.

Director General Hines Reports to President

Government's Loss of $854,000,000 Attributed to Policy of Not Increasing Rates

WALKER D. HINES on February 28 submitted a report of his administration as director general of railroads from his appointment, as successor to W. G. McAdoo, on January 11, 1919, until the expiration of federal operation on February 29, 1920. Following is an abstract of the report:

The federal control of the railroads has been, in point of the magnitude and scope of the industry involved, probably the greatest transfer from private management to public management that has ever taken place. It therefore seems to deserve a detailed statement of what has been done as it affects the public service, labor, the owners of the railroads and the financial results; as to the conditions which will exist upon the return of the properties to private management, and as to the features of unified control, which ought to continue, even under private control.

This report necessarily refers to a considerable extent to policies established by my predecessor. Many of the additional steps taken during 1919 were then taken because the radical change in conditions brought about by the armistice called for changes in method which would have been inadmissible during the period of hostilities.

The Public Service

Passenger Service

The passenger service performed in 1919 exceeded all former records. The number of passengers carried one mile on Class I railroads (operating approximately 230,000 miles of read) for the past five years compared with 1919 was as follows:

Year ended June 30:	
1914	34,496,782,289
1915	31,789,928,187
Calendar year:	
1916	34,585,952,026
1917	39,361,369,062
1918	42,498,248,256
1919 (partly estimated)	46,200,000,000

During the first eight months of the year an important part of the passenger transportation was the movement of troops in process of demobilization. The troop movement had largely disappeared in the last four months of the year, and by January 1, 1920, practically all of four million men called to the colors to serve in the world war had been released from service and returned to their homes, but the passenger travel continued in unprecedented volume. There have been virtually no additions to the passenger or sleeping car equipment in the last two years, so that the trains were frequently more crowded and less comfortable than if the volume of traffic had had a more normal relation to the amount of equipment.

Earnest efforts were made to reduce the proportion of delayed trains, and despite the fact that heavier trains had to be hauled in order to accommodate the travel the records indicate that on the average the percentage of trains on time and making up time was as good as in the past when travel was more normal, and as to numerous important lines was considerably better.

During the war numerous passenger trains were removed, largely because of the necessity for making passenger train equipment available for the movement of troops, but promptly on the signing of the armistice, and throughout the year 1919, much of the passenger service so curtailed has been re-established. Some passenger trains were reinstated, even though it was reasonably certain that they would be operated at a loss, for the reason it was clear the existing service did not reach the minimum to which the public was reasonably entitled. In the western part of the country passenger train mileage added has been in excess of the passenger train mileage canceled during the war. In addition, some of the limited trains have been restored to their former schedules, a number of observation cars which were canceled during the war put back into service and some new sleeping-car lines inaugurated. A constant and successful effort has also been made to improve connections between passenger trains at interior junctions.

Early in the year the war plan of table d'hote meals in the dining cars was discontinued and a la carte service was reestablished in response to urgent popular demand. The a la carte service reduced the number of passengers who could be served per hour, and this fact, together with the enormous increase in travel without any increase in the number of dining

cars, made it exceedingly difficult to meet the demands. But the persistent effort has been to give the best dining-car service possible under the conditions. In recent months the number of complaints as to this service has been reduced to a minimum. It was also the policy to maintain moderate dining-car prices, and it is believed that this policy was successful in comparison with hotel and restaurant prices generally.

Freight Service

The year 1919 presented unprecedented fluctuations in the demand for freight service. At the beginning of the year the relapse in industrial activity following the armistice had fully set in, and for the first six months the slump in freight business was most pronounced. During February, 1919, the average daily surplus of freight cars was 451,026, the highest number on record. The demand for coal in the first six months was extraordinary small, due to the large stocks on hand at the signing of the armistice and to the subsequent slowing down of industry. The average daily surplus of coal cars in February, 1919, was 181,755, and increased in March to 183,993, which was the largest number of surplus coal cars on record, with one exception. Building activity, including road building, had been almost suspended during the war and had not been substantially resumed with a consequent low demand for lumber, structural steel, cement, crushed rock and other building materials. Export business was also extremely low.

By July and August all these arrested activities began to reassert themselves and all the more intensely by reason of the period of inactivity. The less than carload movement of merchandise had been steadily mounting in response to the enormous retail demand, and became an exceedingly difficult factor in the car supply. Practically at the same time the crops began to move. The demand for every sort of equipment for virtually every form of traffic became insistent.

In August the situation throughout the country was greatly complicated by a series of unauthorized strikes on the part of about 200,000 shopmen and enginehouse laborers, with the result that for over two weeks the maintenance of equipment and also the handling of engines and consequently the movement of trains was seriously interfered with, and on some roads freight traffic was almost suspended.

By October the momentum of business revival had gained still further headway, and the demand for the immediate furnishing of an abnormal quantity of transportation had become even more insistent. The coal strike then came in prospect, and by the middle of October the railroads on that account had to begin giving preference to coal movement.

Beginning with November, the railroads had to interfere still further with the handling of the tremendous general business in order to haul coal from the 40 per cent of the mining capacity which still remained in operation to practically all the rest of the country. The railroads thus had to move coal for hauls of 500 to 1,000 and 1,500 miles to meet the emergency demands which normally were supplied by hauls of 100 to 200 miles, or frequently less. Other traffic had to be discontinued to whatever extent was necessary to handle the emergency coal movement. Railroad operation was seriously hampered because to a large extent the railroads had to use sorts of coal to which the engines were not adapted and with which the firemen were not acquainted.

This coal strike, the first nation-wide strike of bituminous miners that had ever been experienced, was perhaps the most destructive episode in the industrial history of the country, and it will probably never be possible to approximate the needless loss to which the country was subjected.

On Sunday, November 9, a storm of extraordinary intensity struck the Northwest, with a 50-mile wind blowing and a heavy snowfall. Early in November the weather became extremely cold in the Central West, the temperature in some instances falling to 36 degrees below zero. This extraordinary winter weather at this early date in the midst of the difficulties of the coal strike almost tied up for several days the principal trunk lines between points on and west of the Missouri river and Chicago. About the same time bad weather began to manifest itself in the Southwest, being marked by excessive rains and washouts on the railroads. During the last week in November extremely heavy rains began in Ohio and Indiana, and rains resulted in high water and landslides in Kentucky and Tennessee. About the middle of December unusually heavy rainstorms caused numerous washouts in the Southern and Pocahontas region, and the blizzard weather also continued throughout the Northwest. During December low temperatures prevailed throughout most of the Eastern region, zero weather registering around Cleveland, and the temperature falling below zero in the Chicago district. In December also there was exceptionally severe weather along the Great Lakes and in the central states. In January, 1920, the severe weather continued in the Eastern region and became manifest in the Allegheny region, and heavy rains, snow and sleet storms were marked throughout the Southwest region. During the third week in January New York harbor was reported blocked with ice, and extremely low temperatures prevailed throughout the Eastern and Allegheny regions. Early in February, 1920, there were severe storms along the entire North Atlantic coast, seriously interfering with the shipping operations at Hampton Roads, New York harbor and in New England. Throughout New England and at some points on the Great Lakes, including Buffalo, these February storms were the most severe on record. These unusually unfavorable weather conditions seriously interfered with railroad operations.

In such conditions the railroads had to begin, at the end of the coal strike, to relocate the coal equipment, which had become widely scattered, a great deal of eastern equipment being west of Chicago and the Mississippi river and loaded with coal frozen in the cars, and again endeavor to the best of their ability to meet the demands of general business which had become more insistent than ever by reason of the conditions referred to.

The railroads in October, 1919, performed a greater volume of transportation service than in October, 1918, 1917 or 1916. In October, 1918, the situation was aided by the war spirit, by the resulting heavier loading of equipment, by the zoning of coal distribution and by compulsory pools of coal tonnage at tidewater and the lower lake ports, which war measures greatly increased the efficiency of coal cars. The freight movement, measured in ton-miles per mile of road per day for the months of September and October in 1916, 1917, 1918 and 1919, was as follows:

	1916	1917	1918	1919
September	5,166	5,217	5,731	5,625
October	5,148	5,385	5,584	5,651

The freight service performed in October, 1919, was materially in excess of that performed in October, 1917. The average car shortage during the month of October, 1919, was 59,510 cars, as compared with an average car shortage of 141,466 cars during the month of October, 1917.

In September it became apparent that the greatly delayed purchasing of coal, combined with interruptions to coal transportation on account of the August strikes, made it advisable to set a minimum of 11,000,000 tons of bituminous coal per week as the amount to be moved during the remainder of the year. This mark was consistently exceeded every week until the strike on November 1. The record for the entire history of the country was reached in the week of October 25, 1919, when 13,200,000 tons were transported. In the month of October, 1919, the movement approximated 56,243,000 tons, as compared with 51,000,000 tons in the

war month of October, 1918, and 45,000,000 tons in October, 1917. The next highest movement was in the war month of August, 1918, when 55,114,000 tons were moved.

Ton-miles per mile of road per day by monthly averages are here given for the only entire years for which they are available:

	1919	1918	1917
January	4,275	3,878	4,770
February	4,002	4,591	4,511
March	4,059	5,273	5,192
April	4,124	5,471	5,257
May	4,524	5,226	5,617
June	4,615	5,423	5,694
July	4,878	5,487	5,441
August	5,075	5,691	5,351
September	5,625	5,731	5,217
October	5,651	5,584	5,385
November	4,711	5,155	5,298
December	4,688	5,184	5,121

The average trainload, carload and percentage of loaded to total car-miles during the three years 1919, 1918 and 1917 were as follows:

	1919	1918	1917
Average trainload in tons of revenue and non-revenue freight	688	681	653
Average carload in tons of revenue and non-revenue freight	27.8	29.2	27.0
Per cent of loaded to total car miles	68.7	67.8	70.2

The ability of the Railroad Administration to perform so large a public service in the transportation of freight in the busy months of 1919, in spite of the extraordinary difficulties, was due to its ability to unify the control of locomotives and cars and to avoid congestion in terminals and on railroads by diverting freight and by pursuing a policy in the common interest in the matter of embargoing freight in time to prevent congestion and in the matter of establishing and enforcing the permit system as to traffic requiring that method.

From the New York World.

Home Again.

The conditions under which traffic must be handled in the autumn months tend to cause congestion in the large terminals, especially at the North Atlantic seaboard and extending west as far as Chicago and St. Louis. At times prior to federal control this congestion was so serious that much traffic destined for the East had to be held on tracks west of Chicago and St. Louis. The unified control, the power to divert freight and particularly the use of the permit system made it practicable to eliminate nearly all of this congestion during the fall months both in 1918 and 1919.

As indicating what was accomplished in unified control of terminals the Chicago terminal district, embracing approximately 2,500 square miles and served by 32 railroads under the jurisdiction of six regional directors, was placed under the immediate supervision of one regional director, and the results were a marked example of successful terminal unification. In the larger terminals terminal managers were appointed, with jurisdiction over the facilities of all lines.

The Railroad Administration established a Refrigerator Car Department, with headquarters at Chicago, through which a unified control was maintained of all refrigerator cars controlled by the railroads and a close co-ordination was obtained with the privately owned refrigerator cars, with the result that an extraordinarily large volume of perishable traffic was moved, although there had been no increase in refrigerator car equipment for several years. One of the most pressing needs of the country is the construction of a large additional number of refrigerator cars.

A like policy was pursued in the control of tank cars, and a correspondingly successful result was obtained.

Earnest consideration has been given through 1919 to the speeding up of the movement of freight in the terminals. It is believed that the greatest opportunity for increasing the efficiency of the cars lies in the avoidance of terminal delays. Special terminal committees were appointed at 73 of the larger terminals, with instructions to make a careful study of the situation at these terminals and to do everything practicable to improve the movement of freight in and through them. The result of the work of these committees has been highly satisfactory.

One of the greatest losses in railroad efficiency is the insufficient loading of freight cars. During the war the Food Administration's rules and regulations required grain and other foodstuffs to be moved in the maximum carload units, and heavy car loading was greatly promoted thereby. In addition, the spirit of patriotism was invoked in all lines of business to aid transportation by heavy loading. These influences were largely lacking in 1919, and the loading was by no means as good, and the ability to perform the transportation service was correspondingly reduced. Continuous efforts have been made throughout the year, however, to counteract these conditions and maintain the heavy car-loading of the war period. For example, in October, 1919, the tariff minimum weights on grain and grain products were increased to the trade units formerly effective under Food Administration rules, and this has resulted in improvement on that particular traffic. Important progress has been made toward securing a heavier loading of tobacco by obtaining the co-operation of the Tobacco Association looking to a standard tobacco hogshead 46 by 48 inches, which will admit of double-deck loading, where the former standard hogshead admitted only a floor-space loading. By efforts of the Railroad Administration and co-operation of shippers, the loading of paper from the largest shipping territory in the United States has been substantially increased, i. e., from 40,000 pounds to 55,000 pounds per car; improvement has also been made in the loading of automobiles, trucks and trailers, and also in the loading of watermelons as well as steel products, fruits, lumber and other commodities. There are great opportunities and great need for additional improvement in these matters.

Handling of Claims for Overcharge and for Loss and Damage

The director general has felt that one highly important service to be rendered to the public was to secure substantial improvement in the prevention of overcharge and loss and

damage claims and the prompt and fair disposition of such claims. Early in 1919, the relief from the stress of war conditions making the step then practicable, a committee under the chairmanship of the director of the Division of Public Service was appointed to deal with this matter. The regional directors also took an active interest in the subject.

The results of the efforts thus made have been most gratifying. The total number of loss and damage claims on hand unsettled was reduced from 888,197 on March 1 to 465,722 on November 1, being a reduction of 48 per cent. The number of loss and damage claims on hand unsettled over four months fell from 366,476 on April 1 to 148,683 on November 1, a reduction of 59 per cent. The number of unsettled overcharge claims more than 90 days old fell from 72,043 on January 31 to 11,102 on September 30, a reduction of 85 per cent.

Relations with the Public

It has been the policy of the Railroad Administration to obtain, and as far as reasonably practicable comply, with the views of the public in the matters of rates and service. To this end, at the beginning of the Railroad Administration, this aspect of the subject was put in charge of the Division of Public Service and Accounts. In January, 1919, it was deemed advisable to create a separate division devoted exclusively to this work, and the Division of Public Service was created. It has endeavored to keep in the closest practicable touch with the state railroad commissions, shipping organizations and individual shippers and producers, and has co-operated with the divisions of operation and of traffic.

Early in 1919, with a view to securing the closest co-operation with the state railroad commissions, the director general and the director of the Division of Public Service held a conference with a large committee of the National Association of Railway and Public Utility Commissioners, and invited, and were fortunate enough to secure, the cordial co-operation of the state commissioners generally.

Another policy established during 1918 was to have a minority representation of shippers upon the 33 freight traffic committees established by the Railroad Administration to handle rate problems. Early in 1919 this minority representation of shippers was increased to an equal representation with that of the railroad managements. The result of this policy has been exceedingly satisfactory, and it is earnestly hoped that for the future the public will thus be given an opportunity to participate at the outset in the consideration of these rate problems.

Another instance of this same policy has been to put a representative of the shipping public upon each of the 73 terminal committees created by the Railroad Administration, so that in studying the practices and conditions in each terminal as to the handling of equipment the Railroad Administration could have the point of view and active assistance of the shippers as well as of the railroad operating officials. Here also (as is true in practically every human activity) the increased opportunity for a common understanding has been productive of favorable results.

The Public Aspect of Rate Matters

In June, 1918, general increases were made in freight and passenger rates, averaging about 18 per cent as to passenger fares, excluding the extra charge in Pullman cars which was discontinued in December, 1918, and about 28 per cent as to freight rates.

The average rate per passenger-mile, as reported by the Interstate Commerce Commission for Class I roads for the year ended June 30, 1914, was 1.976 cents, and it is estimated that the average rate per passenger-mile for the year 1919 was 2.538 cents, an increase of 28.4 per cent over 1914.

The average rate per ton-mile, as reported by the Interstate Commerce Commission for Class I roads for the year ended June 30, 1914, was 0.723 cents, and it is estimated that the average rate per ton-mile for the calendar year 1919 was 0.972 cents, which comparison indicates that the result of all the increases made in freight rates between 1914 and 1919 averaged for the country as a whole an increase of 34.4 per cent. It is appreciated that this comparison is not conclusive, because it would be affected by any changes in the character of the traffic or the length of haul, but no other data are available for a general comparison, and it is believed to be fairly suggestive of the extent of the increase in all freight rates on the average since the beginning of the war in 1914.

During 1919 every effort was made by the directors of traffic and public service to eliminate delays in the procedure of the freight traffic committees. As a result there has been a substantial reduction in the length of time intervening between the date of docketing the request for a rate change and the issue of the freight rate authority. Analysis of the freight rate authorities issued during July to November, inclusive, 1919, shows that the average length of time between the date of docketing the request and the issue of the freight rate authority has been two months or less in 71 per cent of the cases, between two and three months in 14 per cent of the cases, with somewhat longer time as to the remaining 15 per cent; only 6 per cent, however, being in excess of five months.

It has been the policy of the Railroad Administration to have these matters considered both by the Division of Public Service and the Division of Traffic.

The Railroad Administration has sought the advice of the Interstate Commerce Commission with reference to proposed changes in rates and fares of substantial importance and has also sought the advice of the state railroad commissioners in a large number of cases of proposed rate adjustments of substantial local importance since February 20, 1919.

Control of Coal Distribution

The Railroad Administration was suddenly called upon to render an important and difficult public service growing out of the coal strike. This was the service of carrying out the distribution of coal under a delegation of power from the fuel administrator. It was necessary to protect the public against exorbitant prices by the restoration of the government maximum prices for coal, and it was also necessary to distribute the limited amount of coal available to those consumers and industries whose needs were most urgent from the standpoint of the general public interest. The Fuel Administration had disbanded its organization, and therefore had no machinery with which to carry out this difficult work of distribution. The Railroad Administration had an organization throughout the country and also had physical possession of all coal in transit. Hence there was devolved upon the Railroad Administration the work of making this distribution. Coal committees were organized and ready to function on November 1, 1919. Throughout the strike period and the subsequent period of coal scarcity (continuing in some parts of the country up to the present time), these coal committees have handled the coal distribution when there was not enough for all consumers. The coal strike came so suddenly and the needs for diversion of coal to users other than the consignees were so imperative that the emergency had to be met by making the necessary allocations, and subsequent arrangements had to be made for payment of the coal. In various instances substantial delays in payment arose, which caused inconvenience to coal operators and dealers. The constant effort, however, has been to clear up these problems and deal with them as expeditiously as practicable. The coal committees of the Railroad Administration, with the hearty co-operation of the Fuel Administration,

the United States Shipping Board and the other divisions of the Railroad Administration performed an indispensable and highly valuable public service in this critical period.

Relations with Labor

The director general has felt a keen sense of responsibility to railroad employees. He has felt that the employee is entitled to be safeguarded from favoritism and arbitrary action in the matter of discipline and working conditions and to have a reasonable wage. He believes that those who do not earn their living by their daily labor generally fail to appreciate adequately the importance which the laboring man justly attaches to protection from favoritism and arbitrary action, so that he may reasonably be assured a self-respecting career in the work in which his lot has fallen. The rights of property seem to be susceptible of much more clear-cut definition and protection than the rights of labor,

From the New York Tribune.

"Whew!"

and yet the former, though highly important, certainly cannot exceed the importance of the latter.

The policy of the Railroad Administration has been to secure the participation of the representatives of labor in matters affecting its interests, and to endeavor to act with justice toward labor and with appreciation of the perfectly natural and proper point of view of labor.

One of the early steps taken, and an exceedingly important step, was the creation of certain bipartisan boards of adjustment to deal with grievances of employees which could not be settled on the railroads between the local managements and the representatives of the employees. The principle of collective bargaining was frankly recognized in the creation of these boards, because they were created by agreement between the representatives of the railroad labor organizations on the one hand and the regional directors of the United States Railroad Administration on the other hand. The work of these boards of adjustment has been eminently satisfactory. Each has been composed of an equal number of expert representatives of the management and expert representatives of the employees. With a full practical knowledge of the problems, the members have approached their work with the desire to do justice and with the recognition of the importance of reaching an agreement. The result is that in the several thousand cases which have come before the three boards which have been created there has been an agreement in practically every case.

Various orders of the director general have established reasonable rules and working conditions, which were applicable in the very numerous cases where no rules and working conditions had been established prior to federal control, and in some cases the rules and working conditions established by the director general have, by agreement, become a substitute for those which prevailed by agreement prior to federal control.

As a result of these defined working conditions and these boards of adjustment, the employees generally have felt that they were much better protected than formerly against arbitrary action.

Naturally such a system requires time for it to be fully understood and successfully carried out by the vast number of local officials who are responsible for discipline and by the local labor representatives who with the local officials deal with grievances. Inevitably at first the new system had the effect in many instances of raising a question as to the authority of the local officials and caused some discouragement on the part of some of them and some misconception of the situation on the part of some employees. Nevertheless, the system has fully justified itself, and it is only a question of time and mutual understanding when local incidents of a discouraging character will disappear.

It is an interesting commentary that on some of the largest railroads in the country, with the strongest and most effective managements, not a single case has come to one or more of these boards of adjustment. The local managements have dealt with the classes of employees represented on such board or boards so reasonably as to obviate the necessity for appealing thereto any grievances at all, and the committees representing the employees have adopted a reasonable attitude and avoided appeals to the boards of adjustment. Eventually this same successful treatment should be manifest on all the railroads and as to all classes of employees, if the system shall be maintained in some proper form.

The director general has sought to encourage the development of local consultation and co-operation between the local managements and the local representatives of the employees, but has not undertaken to issue positive orders in a matter so dependent upon local personal conditions. He specifically advised that wherever the local conditions were reasonably favorable to such a course efforts be made to establish a regular method of conference and co-operation between the shop committees of the employees and the local shop managements. Naturally the progress of efforts of this character has been affected by the early prospect of a return to private control because a matter of such fundamental policy could not be adopted with confidence by a management having only a few months to live. Nevertheless, decided interest has been manifested in these policies by numerous federal managers.

The principle of collective bargaining has been further recognized in the making of national agreements between the director general and certain organizations of railroad employees, such agreements to remain operative during federal control, subject to modification as provided in the agreements. These agreements have defined the working conditions with more particularity than the general orders did, have provided against strikes or lockouts except after re-

sorting to the machinery prescribed in the agreements, and generally have sought to have a definiteness and stability to the status of the employees to which they seem properly entitled.

Early in the Railroad Administration it was declared by General Order No. 8 that "no discrimination will be made in the employment, retention, or conditions of employment of employees because of membership or non-membership in labor organizations." This policy has been consistently adhered to. No employee is required to join an organization or is prohibited from joining an organization. The employees who are not members of organizations have the benefit of the same working conditions as those who are members. Non-members have the right to representation by the officers of the organization just as members have in matters before the boards of adjustment.

The policy thus carried out has been in accordance with the policy which the railroads generally adhered to long prior to federal control with respect to the trainmen and enginemen and yardmen. Practically every railroad had agreements with the four organizations of trainmen and enginemen or "brotherhoods." These agreements did not establish the "closed shop," and the companies were free to and did employ new men without any reference to membership in the organizations.

The Railroad Administration has pursued the policy of endeavoring to explain to the chief executives of the labor organizations any important general developments affecting the employees, such for example as the discontinuance in a general way of overtime, or the reestablishment in a general way of overtime. In this matter the Railroad Administration has proceeded upon the view that when the employees understood the reasons for a policy they would co-operate much more fully in carrying out the policy than if they were ignorant of the reasons therefor, and were therefore left free to assign erroneous motives for the action. This method has been eminently satisfactory and it is the same method which the director general hopes will be applied with more frequency in local as well as general matters.

Plans for vocational training of railroad employees in connection with the Federal Board of Vocational Education have been completed and all railroads have been authorized to co-operate with the Federal Board of of Vocational Education in the establishment of schools for apprentices. The railroads have also been granted authority to require the attendances of apprentices at these schools not less than 208 hours per year and to incur necessary expenses to fit up suitable class rooms in which such classes may be held. The Railroad Administration has also co-operated with the Board of Vocational Education in the matter of training disabled soldiers and sailors for such work in the railroad service as their physical condition will permit them to undertake.

When the Railroad Administration began in 1918, railroad wages were admittedly below those paid in other lines of industry and a great many skilled railroad employees were being lost on this account to other industries. The Railroad Administration promptly created a Railway Wage Commission, which made a report upon the basis of which General Order No. 27 was issued in May, 1918. It was evident that the work of the commission would not fully dispose of the wage problems because of their complicated character and because the proposals of the commission dealt principally with the cost of living and did not undertake to meet the competition of other industries which were paying higher wages. Therefore a Board of Railroad Wages and Working Conditions was created composed of three representatives of railroad labor and three representatives of the railroad managements. This board then took up the special claims of the various classes of railroad employees and made recommendations, upon the basis of which supplements were issued to General Order No. 27, these supplements making various increases in wages and various changes in working conditions.

Early in 1919 the last of these general recommendations of the Board of Wages and Working Conditions by way of supplement to General Order No. 27 was made and acted upon, and it was then announced that this action completed the "war cycle" of wage increases and that any further increases would have to be considered in the light of new conditions.

The employees in many instances felt that the adjustments which had been made fell seriously short of putting them on a parity with employees in other lines of industry or of giving them an increase in wage reasonably proportionate to the increase in the cost of living. Therefore practically all classes of employees urged additional increases in wages. This matter came first to a head with respect to the demands of the shopmen in the month of August, 1919. In this connection there were various strikes unauthorized by the organizations of which the employees were members, and the shopmen were notified that their demands would not be considered until these strikes were terminated. Upon the termination of the strikes the demands were taken under consideration with the result that the President, being advised that the demands were general in character and that similar demands were pending for practically all classes of railroad employees, and that all the demands contemplated permanent increases in wages, took the position that such demands ought not to be granted pending an opportunity to form a more reliable conclusion as to whether the then level of the cost of living could be regarded as reasonably permanent. Some readjustments, however, were made for the shopmen in order to correct certain inequalities of treatment. Other readjustments were subsequently made, particularly with respect to the matter of the rate of payment for overtime in order to correct inequalities of treatment for certain other classes of employees and for certain parts of the classes of trainmen and enginemen.

The employees recently have strongly urged that sufficient time has elapsed to result in the conclusion that the level of the cost of living is not of a temporary character and hence that their general demands for increases in wages should be promptly granted. The President has taken the position that the matters can not possibly be completed in the brief remaining period of federal control, but that in accordance with the assurance he gave in August, 1919, in contemplation of such a contingency, he will use his influence to expedite their consideration as much as possible immediately after the expiration of federal control.

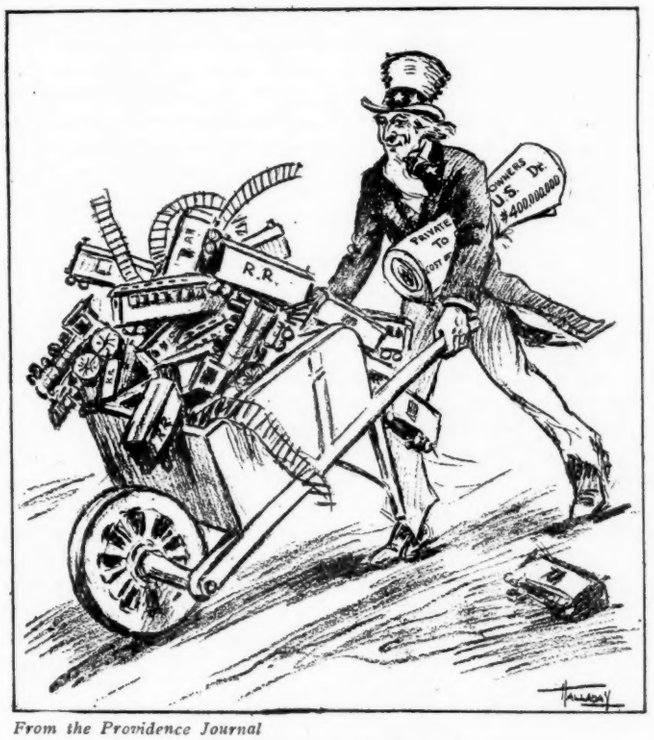
There has been a great deal of misconception and some misrepresentation as to the extent of the wage increases made by the Railroad Administration. The fact is that the average of the increases made, when measured by the increases in the rate per hour, is about 100 per cent or slightly over, as compared with the years 1913 and 1914. It is believed that this is by no means out of line with the increases made in other industries. In fact the reports of the Department of Labor show that the increases in the steel and iron industry in the pay per hour have been about 120 per cent in the same period. Of course the employees have not received an average increase of 100 per cent in earnings, because their work day has been shortened, generally speaking, to eight hours; so manifestly an increase of 100 per cent per hour in pay is partly offset when the hours are reduced from 10 to 8.

While the government was operating all the railroads, it was natural that there should be a considerable extension of the policy of standardizing wages, this being the policy which has made important and in recent years rapid progress on many of the railroads under private control, particularly as to trainmen and enginemen. Such standardization has in-

evitably produced numerous individual cases of especially large increases much in excess of the average. These exceptional and abnormal cases have been seized upon for criticism and have been the source of much misconception as to the general situation. Standardization also resulted in some employees receiving inconsiderable increases.

The Number of Employees

Perhaps the most persistent misconception as to the Railroad Administration's policy toward labor has been the idea that there have been anywhere from 100,000 to 300,000 unnecessary employees put on the railroads simply because of an assumed political policy on the part of any governmental agency to multiply "jobs." The apparent predisposition on the part of a large portion of the public to attribute this



From the Providence Journal

Getting Rid of Them

policy to a governmental agency has led various speakers and newspapers into a wholly incorrect estimate of the situation.

Before pointing out the detailed facts as to the number of employees, it is important to emphasize that in the formation of the Railroad Administration and throughout its life, there has been consistent adherence to the policy of making appointments to office without regard to political considerations. The Railroad Administration is an interesting illustration of an organization which has never contained any officials who sought their positions. The selection of employees on the railroads has been in charge of local railroad officers who, generally speaking, are the same who operated the railroads prior to federal control and will continue to operate them after federal control. No such officer was under any compulsion or influence to employ or retain any employee unless that employee was necessary to the performance of the work to be done. And the Central Administration has steadily used its authority and influence to prevent the employment of unnecessary labor.

The controlling fact in this matter of the number of employees is that the number is determined by the number of hours they work per day. The 8-hour day has been established as a general policy of the Railroad Administration. It was in effect only as to some classes of employees on some railroads prior to federal control and the average workday prior to federal control was considerably in excess of 8 hours. This change in policy has undoubtedly brought about an increase in the number of employees, but it has not brought about an increase in the number of hours of work paid for, which is the significant thing with respect to operating expenses.

The fact is that the number of hours of work paid for by the Railroad Administration in 1919 was less than in 1916 (the first year the statistics are reasonably complete), 1917, or 1918.

The figures are as follows:

	Calendar years			
	1916	1917	1918	1919, Partly estimated
Number of employees ..	1,647,097	1,723,734	1,820,660	1,891,607
Equated hours worked ...	5,189,790,716	5,406,878,384	5,641,820,405	5,126,142,664
Revenue ton-miles	362,444,397,129	392,547,347,886	403,070,816,694	363,240,000,000
Passenger miles	34,585,952,026	39,361,369,062	42,498,248,256	46,200,000,000
PER CENT OF YEAR 1916				
Equated hours worked, p. ct.	100	104.2	108.7	98.8
Revenue ton-miles, p. ct.	100	108.3	111.2	100.2
Passenger miles, p. ct.	100	113.8	122.9	133.6
Average hours per employee month	263	261	258	226

Note.—The time worked for about 11 per cent of the employees is reported on a daily basis and in order to equate these days to hours, it has been estimated that these employees have worked on the average 10 hours per day for each of the years covered by the table. As a matter of fact the hours per day of some of these employees reported on a daily basis were less in 1919 than in previous years on account of the establishment of the 8-hour day, but in the absence of accurate statistics, all have been assumed to work 10 hours per day in 1919 as well as in the previous years, thus making the showing slightly less favorable to 1919 than it would be if the exact hours worked by daily employees were available.

Thus, despite the extraordinary difficulties of 1919, the hours of work paid for are actually less than in 1916 and are also less in proportion to the business done. This is true notwithstanding the further fact that is recognized in every line of industry, and is the subject of frequent comment by business men, that by reason of the far-reaching changes and the widespread unrest which are the results of the war, labor is often less experienced, attentive, and effective than it was before the war.

Notwithstanding this exceedingly favorable showing on the basis of the hours of work, it is of course true that there has been an increase in the number of employees which is explained by the simple fact that in 1916 the employees worked much longer hours than the employees working at present on the basis of the eight-hour day.

Women's Service Section

Especial attention has been paid to the working conditions of women employees on the railroads. These employees increased rapidly on account of war conditions. The number rose from 31,400 January 1, 1918, to 101,785 October 1, 1918, and then fell to 81,803 October 1, 1919. To some extent during the war, women were employed in occupations calling for labor of a heavy and unsuitable character; but special attention has been paid to this matter and these conditions have been corrected. Substantial progress has been made in providing health and comfort facilities. The labor laws regulating the employment of women have been observed almost without exception. The Railroad Administration took, in 1918, the important step of providing that women's pay, when they do the same class of work as men, shall be the same as that of men. Undoubtedly these policies, connected with recognition of senority rights, have done much to give women a better position and a better outlook in railroad work than they have ever had before.

Strikes

There has not been an authorized strike of railroad employees during federal control, although there have been a few authorized strikes of organizations of longshoremen, dock laborers, etc., whose work is not primarily railroad work and whose policies have been largely influenced by conditions outside of railroad employment. There have been various unauthorized strikes, the three principal ones being the clerks' strike on several railroads in the Southeast in March, 1919, and, in the following August, the strikes of shopmen and enginehouse laborers on numerous railroads, and the strike of the train and engine men in California, Arizona, and Nevada. In each of these cases, as well as in various minor unauthorized strikes, the trouble has been due to the failure on the part of the employees to pursue the agreed-upon methods of dealing with disputes. This was due in part to the failure of the employees to understand the methods which had been adopted for the orderly handling of these matters, but it is believed that the strikes were also largely due to the efforts of agitators who were endeavoring to make capital out of the general spirit of unrest and who were hoping to "start trouble." In all these cases the Railroad Administration has taken the position that it would not deal with the strikers at all while on strike and that they must first return to work before their grievances would be considered and this position has been maintained. In all these cases the Railroad Administration has had the support of the general officers of the railroad labor organizations.

When it is considered how widespread has been the spirit of unrest, how burdensome the cost of living has been, and how active have been some agitators desiring to make trouble and to develop conditions favorable to disorder, the railroad employees as a whole are entitled to be highly commended for the steadiness and loyalty with which they have stuck to their work in the face of all sorts of misrepresentations and appeals to strike.

The Cost to the Public of Conducting Operations During Federal Control

The Cost of Federal Control

There is a popular and misleading catch phrase to the effect that "federal control has cost" anywhere from $700,000,000 to $1,900,000,000, according to the bent and fervor of the person making the statement. As the result of my continuous contact with this subject and repeated discussions concerning it with railroad operating people throughout the country, my deliberate judgment is that federal control has not cost a cent more than private control would have cost in the same difficult period, but on the contrary has cost considerably less. I believe that the private control which existed in December, 1917, if it had continued during the increasing war stress of 1918, till the armistice, and during the even more difficult period of reconstruction since that time, would have encountered in the aggregate substantially as great increases in cost as the government has encountered and would have been wholly unable to realize many important economies which have been accomplished through unification and which have helped to offset partly the aggregate increases in cost.

The easy allegation of heavy loss of federal control, as distinguished from private control, has rested upon the fallacious notion that "there is no loss unless you see it," i. e., that there would have been no loss to the public if the public had paid rates high enough to cover the cost, including the rental, and that there is a loss to the public to whatever extent the public has not paid high enough rates to pay such entire cost.

The fact is that the cost which is paid by the public would certainly not be diminished through increasing the rates. This cost may be paid in full by transportation rates which are in substance a form of special taxation, or may be paid in part out of general taxation; but the public should realize that it does not escape paying the full cost merely because the cost is made less obtrusive through rates being high enough to avoid a deficit to be made good through general taxation. The public has to pay the cost in full in either event.

Railroad rates are perhaps as all-pervasive in their incidence as general taxes themselves, so the general public would have paid just as fully for the operating costs if rates had been raised so as to avoid the deficit as under the policy which was adopted. Indeed, an additional general readjustment in railroad rates during federal control would have brought about, in view of the strong general upward trend of prices, so many disproportionate increases in prices that the public would have paid much more on account of railroad costs than it did in fact pay. The methods of raising moneys for the Treasury were not fundamentally changed on account of meeting the railroad deficit, and hence did not involve the innumerable special readjustments of prices which would have been made on the pretext of an additional general readjustment of transportation rates.

Private Control Would Have Cost More

Therefore the question "what federal control has cost" as compared with what private control would have cost is dependent not upon the methods used for raising the money to pay the cost, not upon the question whether the cost is obtrusive as a deficit or unobtrusive because covered by increased rates, but is dependent upon the cost itself.

As to actual costs the railroads under government control have been subjected to the same character of influences which have greatly increased costs in all other industries during the war. The total operating costs of the Steel Corporation were 150 per cent more in 1918 than they were in 1914, whereas the operating costs of the Class I railroads were 102 per cent more in 1919 than in 1914. The increased cost per ton of finished product of the Steel Corporation in 1918 was 61 per cent as compared with 1914, whereas the increased cost per unit of service on the railroads in 1919 was not more than 60 per cent as compared with 1914. The figures of the Steel Corporation for 1918 are taken because they are the latest available, and thus the comparison made is unfavorable to the Railroad Administration if, as is believed, the unit costs of the Steel Corporation were higher in 1919 than they were in 1918.

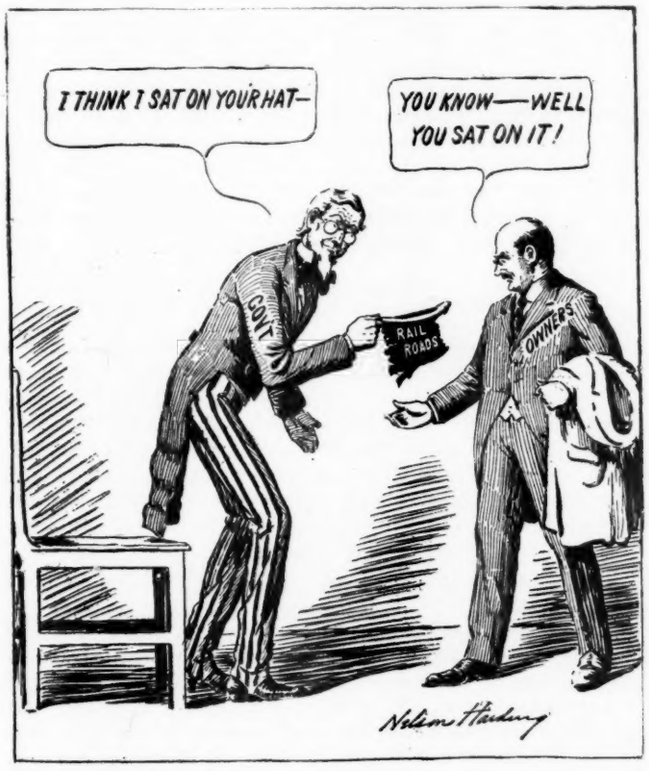
It would be surprising if complete analysis did not indicate a more favorable showing as to operating costs by this large private enterprise with unbroken continuity of management and policy extending over a period of nearly 20 years and its ability to plan with confidence for the future, than by the Railroad Administration. The latter was created almost overnight as a war emergency and avowedly as a purely temporary expedient; was unable to create a really permanent organization or to hold throughout even its temporary life some of its experienced members; and was without opportunity to carry out comprehensive policies of a reasonably permanent character either as to capital expenditures or as to operation.

This illustration of the largest private enterprise is made simply to emphasize the fact that the railroads like other industries were subject to the conditions growing out of the war and the purchasing power of the dollars expended by the railroads for operating expenses was affected as in other industries. Undoubtedly the same condition would have been experienced if the railroads had been in private control. They would have had to pay the increased cost for materials and

supplies and the average increases in wages by the Railroad Administration were in line with those in private industry and there is no reason to believe that the railroads under private control would have avoided corresponding aggregate increases.

The resulting favorable showing made by the Railroad Administration has been influenced in part by the economies which have been possible as a result of the unification of terminals and ticket offices, elimination of circuitous routes, pooling of repair facilities, common use of parallel main tracks, etc.

A further element of cost which would have been incurred under private control and which was saved under federal control would have been the heavy cost either (a) of giving the railroads high enough rates to enable them to maintain their independent credit during a period of great financial difficulty, so as to borrow the money necessary to make about $1,200,000,000 of indispensable improvements made during government control, or (b) the heavy cost of not having that



From the Brooklyn Eagle.

The Old Story

credit and hence of not having the improvements. This item of the greatest public importance was saved through federal control because without any such abnormal increase in rates the government through its own credit temporarily provided the necessary funds for the indispensable improvements.

Results of and Reasons for Policy of Not Making Rate Increases Sufficient to Cover Entire Cost

Since the cost of railroad operations during federal control was in no sense out of line with the necessities, and since those necessities would have produced even more unfavorable results under private control, it is appropriate to explain why rates were not increased enough to pay these costs. To begin with, the increases in operating costs took effect to a large extent on January 1, 1918, and yet it was impracticable to make the general rate increases effective until a late average date in June, 1918. If these increased rates could, instead, have been made effective January 1, 1918, *there would have been no deficit or "loss" whatever up to and including the end of October,* 1919. The entire "loss" on the Class I railroads and large terminal companies for that period of 22 months of federal control of $480,200,000 would have been more than wiped out if the rate increases had been effective January 1, 1918. The "loss" for the two months of November and December, 1919, was due almost entirely to the effects of the coal strike.

During the first six months of 1919 the operating results were so unfavorable as to cause many suggestions in favor of then making a substantial general increase in freight rates, but it was apparent that the results for those months were to a very large extent due to the abnormal slump in business. Hence it was believed that the showing of inadequacy of the revenues was too fragmentary and unreliable to justify the serious consequences incident to an additional reconstruction of rates.

The following four months of 1919, July to October, showed considerably more favorable results and indicated, even after allowing for the naturally more favorable results for that season of the year, that a very slight rate increase would be required under unified control in order to cover the operating expenses and rental. These months clearly showed that it would have been incorrect to predicate a general rate advance upon the results from the exceedingly small freight business in the first six months of the year. The months of November and December were exceedingly unfavorable on account of the coal strike, but again no general rate increase could properly have been predicted upon such abnormal results even if there had been time.

There is a very natural inability on the part of the general public to appreciate the complexity of the rate structures of the country. Therefore many people have assumed that it is a simple and a desirable matter to make general rate readjustments from time to time to conform promptly to the increasing operating expenses which the Railroad Administration has been no more able to escape than have other lines of business.

When the increases in freight rates were made in 1918 earnest efforts were made to avoid as far as possible disturbance of existing rate and business relationships. It is obvious that no general increase in rates can entirely escape such disturbance. No method, no matter how carefully planned, can do more than minimize such disturbances; it can not eliminate them. As illustrating the magnitude and difficulty of the problem, the result of the general increase in freight rates made in 1918, despite the careful effort to minimize disturbance of prior relationships, brought about so many requests for revisions that 33 traffic committees sitting in various parts of the country have been occupied nearly all the time for about a year and a half dealing with these matters, and over 20,000 freight-rate authorities have been issued to make changes to eliminate or improve unsatisfactory adjustments. About 79 per cent of these changes in rates have been reductions. In addition to this work these traffic committees were engaged simultaneously in handling the general freight-rate problems of the country.

Considering the wholly abnormal character of results during most of 1919, the consequent unreliability of these results as a basis for the general rate increase, and the great business embarrassments which would result from an unnecessary additional general rate adjustment, it was clearly in the public interest to avoid such a disturbing influence in a period already filled with disturbing influences, even though it was necessary in consequence to draw temporarily on the Treasury for a portion of the cost of operation. This course was adopted because clearly in the public interest and notwithstanding the fact it was appreciated that the resulting deficit in railroad operations would be mistakenly regarded

as a "loss" to a much greater extent than if exactly the same total cost had been paid for through increased rates instead of through appropriations from the Treasury.

At one time the railroad corporations urged that these general rate increases ought to be made so that the properties would be self-sustaining at the time they were turned back to private control. But the federal control act contemplated the initiation of increased rates by the President for the purpose of paying the expenses and rental of the railroads "under a unified and co-ordinated national control and not in competition." It was believed by the director general that any increase necessary to meet the expenses and rental during unified control would have been much less than would be necessary to give adequate earning capacity to the various railroads and the necessary credit to the various railroad companies when operating on their own responsibility and in competition. Hence if increases in rates had been made during 1919 in an effort to cover the rental and the entire operating expenses, this would not have obviated the necessity for a still further general rate adjustment upon the expiration of federal control. Clearly it was much more in the public interest to have one general rate adjustment for the purposes of private control than to have, in addition, an intermediate one for the purposes of federal control.

The foregoing reasons caused the Railroad Administration to adhere to the view that there ought not to be a second increase in rates during the brief period of federal control and the failure to make this second increase in rates is the reason for what has been so generally described as the "loss" and as the cost of federal control as compared with private control.

Financial Situation

There is attached as Appendix I, a financial statement which shows the estimated net disbursements made for capital expenditures and other advances by the government and for operations during the 26 months' period (January 1, 1918-March 1, 1920) of federal control of Class I railroads and other properties, including the express companies, and appropriations made and required. Such exhibits also show the excess of operating expenses and rentals over operating revenues for the different properties operated.

It will be observed that this excess of operating expenses and rentals over operating revenues for Class I railroads for the 26 months' period was $715,500,000. In considering this figure the following analysis is worthy of attention:

If the general rate increase had been effective January 1, 1918, instead of in June, 1918, this amount would have been reduced by	$494,000,000
If for the months of January and February, 1920, the railroads could be paid a rental proportionate to the normal earning capacity of January and February as shown by the test period, instead of receiving the full two-twelfths of a year's rental, this amount would have been further reduced by approximately	49,000,000
If the coal strike had not taken place, this amount would have been further reduced by most, if not all, of the actual deficit shown in these two months, aggregating	114,000,000
Undoubtedly a very large part of the deficit in the first six months of 1919 was due to the extraordinary slump in freight business in those months. The total deficit in these months (included in the $715,500,000) was	292,500,000

These considerations emphasize that the figure which is taken as representing "loss due to federal control" is in no sense chargeable to federal control as against private control.

The explanation of the above item of $49,000,000 is that if under the federal control act the railroad companies could have been paid a rental for the months of January and February, 1920, proportionate to the normal earning capacity of those two months (which are always unfavorable), as tested by the average results in those two months of the three-year test period, the rental pay for Class I railroads and large terminal companies would have been $101,000,000, instead of $150,000,000, which is two-twelfths of the annual rental, and which the Railroad Administration in fact has to pay for those two months.

It will be observed that the grand total for which appropriations have been made and will have to be made will approximate $1,886,322,885; that of this amount $1,031,899,451 represents items of indebtedness and investment which will eventually be repaid to the government, with the possible exception of relatively small amounts of "bad debts" or investments which may not be realized upon.

Of course, it is not possible at this time to state with completeness the final result, because the government will have various claims against the railroad companies and the railroad companies will have various claims against the government, and these matters will not be liquidated for a considerable period, and, indeed, the claims have not yet taken definite shape on either side to any considerable extent.

There have been various suggestions to the effect that there would be valid claims against the government that would increase the amounts above indicated by several hundred thousand dollars on account of undermaintenance of the properties. But as will be pointed out below, the government will be able to show that it has approximately maintained the properties in accordance with the requirements of the contracts, although undoubtedly there will be substantial readjustments that will have to be made in the case of particular companies both for overmaintenance and for undermaintenance. While the net result can not now be forecast, it is reasonably clear that any balance against the government will be a relatively small amount and it will fall far short of the assumptions which have been indulged in.

Contract and Compensation Features

The making of standard contracts with railroad corporations has progressed steadily throughout the year and up to the present time. At present 147 contracts have been executed and 83 are still under consideration. Of these 49 have agreed with the director general as to compensation, while 15 have declined to accept compensation offered and have filed applications with referee boards to fix compensation. Six roads have declined to make contracts and seven have never made application therefor. These 13 roads, with 2 others, making a total of 15, probably will not make a standard contract.

The federal control act contemplates that in cases where the "standard return," that is, the average annual net operating income as defined in the statute for the three-year test period ending June 30, 1917, is plainly inequitable, an agreement may be made for such amount of compensation as may be found to be just. Under this provision applications for additional allowance of compensation aggregating $92,318,789.39 have been made and additional compensation to the amount of $7,493,618.53 has been allowed and agreed upon. The claims of several carriers upon which no agreement could be reached are pending before referees appointed by the Interstate Commerce Commission as provided in the act.

In addition to the railroad systems of the country, there were various shorter railroads generally spoken of as "short lines." The Railroad Administration took the position that these were not included in the President's proclamation taking possession and control of the railroads, because such short lines were not regarded as "systems of transportation." The federal control act, which became effective March 21, 1918, announced that certain classes of these "short lines" were to be deemed in federal control, but gave the President the right to relinquish any railroads under federal control prior to July 1, 1918. In pursuance of this power, the President relinquished the "short lines" whose further federal control was not deemed needful or desirable. Generally

speaking, no actual control was asserted over these "short lines" in the period between March 21 and July 1, 1918.

Subsequently a form of "co-operative contract" was agreed upon with the representatives of these relinquished "short lines" whereby they might be taken back into federal control so as to be under the jurisdiction of the President to whatever extent might appear to be expedient, but at the same time to be operated at the sole risk and expense of the short-line companies themselves, the Railroad Administration, however, agreeing to accord them certain protection in the matter of a proportion of competitive traffic, and certain advantages in the matter of free per diem allowance for cars of the Railroad Administration, while on the "short lines." In pursuance of this policy 132 "co-operative contracts" have been executed. The Railroad Administration also indicated that it would accord similar advantages to short-line companies not making the "cooperative contracts," provided such companies executed waivers of any claims against the government, and such arrangements have been made with 64 companies.

Expenditures for Additions and Betterments

One of the important reasons for assumption of control of the railroads by the government was that the government might make the improvements to these properties essential to the handling of the traffic and therefore which were indispensable for war purposes and which the railroad corporations

Financial Statement of Railroad Administation After 26 Months of Federal Control

Statement showing estimated net disbursements made for capital expenditures and other advances by the government and for operations during the 26 months' period (Jan. 1, 1918—Mar. 1, 1920) of federal control of Class I railroads and other properties, including American Railway Express Company and appropriations made and required.

1. Total advances by the Government for additions and betterments to roadway and structures and equipment (except allocated equipment)	$780,405,512	
2. Amount that may be deducted therefrom on account of compensation, depreciation, open account, etc., due companies	461,480,839	
3. Net amount of additions and betterments to roadway and structures and equipment (except allocated equipment) to be funded for 10 years (see note 1)		$318,924,673
4. Allocated equipment funded through equipment trusts, principally payable in 15 annual installments		357,011,454
5. Other indebtedness due Government to be evidenced by one-year notes (see note 1)		194,680,562
6. Long-term notes payable to Government		44,433,664
7. Stocks, bonds and receivers' certificates of railroad companies owned by Government		23,565,198
8. Total representing indebtedness of railroads and other properties, including express companies		$938,615,551
9. Other investments of Railroad Administration:		
Additions and betterments to inland waterways	$10,029,496	
Miscellaneous investments (chiefly Liberty bonds)	83,254,404	
		93,283,900
Total of items of indebtedness and investment		$1,031,899,451
10. Estimated excess of operating expenses and rentals over operating revenues:		
Class I railroads	$715,500,000	
Other privately owned properties (smaller railroads, sleeping and refrigerator car lines, and steamship lines)	29,170,000	
Inland waterways	2,570,000	
Expense of central and regional organizations	14,080,000	
American Railway Express Co.	37,000,000	
Adjustment of materials and supplies in settlement with railroad companies on account of increasing prices	74,003,434	
	$872,323,434	
Less net credits on account of interest on (*a*) open accounts, (*b*) compensation, and (*c*) expenditures for additions and betterments	17,900,000	
		854,423,434
11. Grand total		$1,886,322,885
Original appropriation, Federal control act	$500,000,000	
Deficiency appropriation	750,000,000	
Appropriation carried in pending railroad bill	200,000,000	
		1,450,000,000
Additional appropriation that will be required		$436,322,885

NOTE.—The net amount of $318,924,673, representing cost of additions and betterments to roadway and structures to be funded for 10 years, is reached by making such offsets as are permissible under the terms of pending railroad bill, in the first instance, against indebtedness growing out of additions and betterments. It is quite likely that in the actual settlement with many roads offsets will be used in the first instance to wipe out indebtedness represented by demand notes or by open account instead of against additions and betterments to roadway and structures. The result of this would be to increase the net amount of additions and betterments to roadway and structures to be funded and correspondingly to decrease the amount stated in item No. 5, of $194,680,562, as representing other indebtedness due the Government to be evidenced by one-year notes. The total of indebtedness to the Government would, of course, not be affected.

200,000,000 has been expended in the period of federal control by the government for improvements of this character. Of this amount about $140,000,000 has been paid through funds raised by the corporations and about $180,000,000 has been or will be paid through application by the government to that purpose of portions of the compensation due the corporations for the use of their properties but available for application for this purpose.

During the year 1918 the policy of the Railroad Administration was to limit improvement to war necessities because the demand for materials and labor for other war purposes was so imperative that no material or labor was available for railroad expenditures except when they themselves could be regarded as urgent war needs.

The Railroad Administration gave careful consideration to the question as to the amount of equipment for which materials and supplies could be obtained. As a result there were ordered 1,930 locomotives and 100,000 freight cars of the types believed to be the most urgently needed for war purposes. These freight cars consisted of various types of box cars and open-top cars, but did not embrace any refrigerator cars, tank cars, stock cars, or flat cars. No passenger train cars of any sort were purchased by the Railroad Administration. The total deliveries of equipment during the period of federal control, including equipment purchased by the railroads or constructed in railroad shops, were as follows:

	Purchased by railroads	Constructed in railroad shops	Purchased by Railroad Administration	Total
Locomotives	1,910	393	[1]2,114	4,417
Freight cars	25,600	12,909	95,704	134,213
Passenger-train cars	700	107	.....	807

[1]Includes 200 Russian locomotives leased from the War Department.

The equipment ordered by the Railroad Administration was allocated to the various railroads according to its judgment as to their needs. The locomotives were accepted as a rule and without much protest. The allocation of the cars, however, raised great protest. Emphatic claim was made that the cars ought to be regarded as a war burden and paid for by the government, also claims were made that the cars were not needed in the number or of the character allocated. Upon receipt of any such protest each case was considered on its merits and such modifications made in the allocation as seemed to be just. When it became clear that the prices of equipment at the end of federal control promised to be higher than the government paid for the equipment in question, the objections to the allocations disappeared in many cases, and, in fact, some companies which had objected to the allocations because too large sought and received additional equipment out of amounts not allocated.

In 1919 it had become apparent that Congress was anxious to see the railroads returned to private control at the earliest practicable date and was not favorably inclined toward making any appropriations for any expenditures by the Railroad Administration which could be avoided. It therefore became necessary to cut down authorizations for expenditures in 1919 to those which were regarded as unavoidable. As a result of this policy, no new equipment was ordered by the Railroad Administration (although about $40,000,000 was authorized for betterments to existing equipment and for a small amount of new equipment which was ordered directly by some of the companies), and the expenditures for additions and betterments to way and structures were restricted to those which were regarded as imperative. This policy was accentuated and had to be followed with the greatest possible strictness because of the adjournment of Congress on March 4, 1919, without the passage by the Senate of the $750,000,000 appropriation for the Railroad Administration which had been passed by the House.

During a considerable period immediately preceding federal control, the railroad companies had cut down the amount of their expenditures for additions and betterments and equipment because of the high prices, difficulty in obtaining deliveries, absence of funds, etc. The Railroad Administration was, of course, not able to make any plans whatever with respect to a program of capital expenditures for either way and structures or equipment for the calendar year 1920, and it is understood that comparatively little has been done in that direction by the railroad companies.

The result is that at this time very large expenditures are called for on the railroads in the public interest to increase their efficiency and enable them to meet the growing demands for transportation. Unless the railroad companies shall be able to adopt and enforce the important unifications of facilities and equipment and control in the common interest of the handling of business in times of stress, the available facilities and equipment will turn out to be wholly unequal to the requirements of the public. Even with substantial continuance of all the important methods of unification and common control, the necessity for very large capital expenditures, both of way and structures and for new equipment, will be very great.

The capital expenditures during federal control were as follows:

	Calendar year 1918	Calendar year 1919	Total, 2 years
Roadway and track	$294,000,000	$247,000,000	$541,000,000
Improvements to existing equipment	19,000,000	21,000,000	40,000,000
New equipment purchased by railroads	161,000,000	64,000,000	225,000,000
New equipment purchased by Railroad Administration	118,000,000	239,000,000	357,000,000
Total	$592,000,000	$571,000,000	$1,163,000,000
Estimated expenditures in January and February, 1920	.....	.....	37,000,000
Total for period of Federal control	.....	.....	$1,200,000,000

Inland Waterways

Pursuant to the general policy and authority established by the federal control act, the director general has acquired and operated towboats and barges on the lower Mississippi river between St. Louis and New Orleans and on the Warrior river between the Alabama coal fields and Mobile and upon the Mississippi Sound and connecting waters between Mobile and New Orleans, and has operated towboats and barges on the New York Barge Canal. All of these waterways are public highways and have in no sense been in possession or control of the director general of railroads. This statement is made particularly because a confused notion seems to have existed to some extent in the state of New York that the director general of railroads had assumed possession and control of the New York Barge Canal. That canal is a public highway, owned and maintained by the state of New York, and is equally free to all. The director general has simply operated boats on that canal, as all other persons have continued to have the right to do.

The director general has also had possession and control over the Delaware & Raritan Canal (connecting the Delaware river with the Raritan river) as an incident to his possession and control of the Pennsylvania Railroad system.

All of these operations on the New York Barge Canal, the Lower Mississippi and Warrior river and connecting waters represented mere beginnings; suitable equipment was not in existence, and the construction of suitable equipment was greatly hampered by the demand for materials for other purposes during the war. The result has been that these operations have not yet proceeded beyond the incipient stage, which is inevitable in the development of new enterprises. Consequently the operations so far have resulted in deficits. But these deficits should not be regarded in any sense as tending to show that such operations are not economically justifiable. The operations represent important experiments

which in the public interest ought to be made, and they should be carried forward in an effective and sympathetic spirit.

During the year 1919 the construction of the necessary equipment for use on these waterways has progressed as rapidly as was practicable, and it is expected that by midsummer, 1920, all this equipment will be completed and each of these operations will then be in a position to function effectively and economically. Very important progress has been made during federal control in developing rail and water rates which would offer inducements to the utilization of these waterways.

I am a firm believer in the policy of continuing these operations under government control for at least a reasonable period to give an adequate opportunity for their proper development in order that a satisfactory test may be made of the practicability of utilizing the inland waterways of the United States. I anticipate that that test will demonstrate that for at least certain classes of traffic the water transportation is practicable and economical and highly in the public interest.

The Work of the Various Divisions and of the Regional Offices

Earnest and effective work has been done by the various divisions of the Central Administration and also by the regional directors and their associates. The annual reports of the directors of the divisions and of the regional directors give a most enlightening account of the varied and useful activities of these officers.

The Division of Operation has had the largest task. It has had to supervise the maintenance of equipment, the maintenance of way and structures, and transportation. It has thus had to deal from the managerial standpoint with all the labor problems of the Railroad Administration, acting in conjunction with the Division of Labor, which dealt with these problems from the labor point of view.

The Division of Operation has given persistent attention to the subject of securing the greatest possible use of locomotives with the least delay in terminals, the elimination of unnecessary forces of employees in roundhouses and shops, and the consolidation of terminals.

The car-service section of the Division of Operation has had charge of the highly important matter of car distribution and has also had charge of the administration of the permit system and the placing of embargoes, all these matters being handled largely through the regional directors' organizations.

The Division of Operation has also maintained a safety section which has made a wonderful record, a fuel conservation section, which has brought about marked economies through the use of more suitable qualities of coal in more efficient methods, and an operating statistics section which has collected and compiled statistics of the operations of the Class I railroads on standard forms prescribed by it.

The Division of Operation has also had charge of the coastwise steamship lines which were under federal control and also of the Pullman lines.

The Division of Traffic has had charge, from the railroad management standpoint, of all rate adjustments, acting concurrently with the Division of Public Service, has had charge of the issuing of tariffs and has greatly simplified that work, has had charge of the supervision of inspection bureaus to detect and prevent the misdescription of shipments, improper packing, marking and stowing, securing accurate weights and the elimination of unnecessary weighing, and has established an inspection bureau in official classification territory similar to those in southern and western territories. The Traffic Division, in connection with the Division of Public Service, has supervised the freight traffic committees. The Traffic Division has had charge of the rerouting of traffic so as to avoid circuitous hauls and has also had charge, with the active assistance of the Division of Public Service, of the campaign for heavier loading, and has also had charge of the dining-car service.

The Division of Law has had charge of the claims for special compensation, the making of special contracts, the making of short-line co-operative contracts, the supervision of matters of legislation affecting railroad operation, matters of taxation, has advised the Division of Capital Expenditures in connection with the allocation of equipment and the Division of Purchases in connection with questions arising under the contract for the construction of equipment. The Division of Law has handled formal matters before the Interstate Commerce Commission and the state commissions and has had charge of the claims property protection section, designed to prevent loss and damage to freight and to promote more prompt settlement of claims.

The Division of Purchases has left to the purchasing agents of the various railroads the purchase of ordinary supplies, but has handled, in part through central committees and in part through regional purchasing committees, the purchases of coal and crossties and has directly handled the purchases of steel rail. The Division of Purchases has had charge of the stores organizations on the railroads and of the materials and supplies in general. It was through the Division of Purchases that the coal committees were organized, which handled coal distribution during and since the coal strike.

The Division of Accounts has had the highly important problem of bringing about the statement of accounts so as to show the relation between the government and the railroad companies. The Railroad Administration in this respect has had to perform a dual function one was to operate the railroads and record the current transactions so as to bring out the facts as to the results of operations, and the other was to keep proper records and accounts to bring out the result of the mutual obligations of the government and the railroad companies growing out of the possession and control of railroad property.

The Division of Finance has had charge of the payments of money to the railroad companies on account of compensation and on account of advances, and also the furnishing of money to the federal treasurers on the various railroads when needed for current operations. The Division of Finance has also had to concern itself with the question of character of securities which railroad companies could give for advances made, both for equipment and for other capital expenditures as well as for other purposes, as to the extent to which deductions could properly be made from compensation on account of advances made, as to the methods to be adopted to reimburse the government for advances not yet reimbursed, etc.

The Further Duties of the Railroad Administration

The Railroad Administration has been charged with two distinct functions. The first has been the rendition of the public transportation service and the administration of the duties connected therewith related to transportation and maintenance, labor problems, rate and other traffic and public service problems, control of current capital expenditures, etc. This function ends with the return of the railroads to private control.

The second function has been to fix and administer the contract relations between the government and the railroad companies and to settle the innumerable questions that grow out of these contract relations. This function will continue until final settlement shall be completed or until other provisions shall be made for winding up such settlements.

This function, connected with the contract relationships

and the settlements involved therein, constitutes in itself an exceptionally important responsibility and administrative task. Involved in this unprecedented transaction are 240,000 miles of main line of railroad, which with its equipment is variously estimated as being worth from $15,000,000,000 to $20,000,000,000, for which an annual rental of about $917,000,000 is paid.

Agreement upon a standard form of contract to be made with each railroad company, the adaptation of that form to the particular conditions of each company, agreement upon the rental, consideration of the materials and supplies received and of the corresponding amounts to be returned at the end of federal control, attention to the payments by the government on bills due by the corporations and collections by the government on bills due the corporations, determination of the extent to which the corporations would be charged for capital expenditures made for additions and betterments and equipment and the manner in which payment therefor should be made, determination of the mutual rights of the parties as to overmaintenance or undermaintenance of the properties, and consideration of countless other problems, of which the foregoing are mere suggestive illustrations, have presented a task of stupendous proportions, entirely apart from all the problems of public service, operation, labor relations, etc.

The final adjustment of all these matters will call for attention for a considerable period in the future. While all the activities incident to the public service and operation side of the Railroad Administration will be discontinued as of March 1, except as to small forces temporarily retained to receive the final reports and consolidate the records and dispose of the incidental matters which cannot be completed by the end of this month, it will be necessary, on the other hand, to continue and in some instances temporarily enlarge the branches of the organization dealing with these matters related to settlement with the corporations. The accounting branch of the organization will, of course, continue to be of the highest importance. The newly organized Division of Liquidation Claims is developing its organization to consider and dispose of claims which may be presented on account of alleged undermaintenance of way and structures and equipment and also claims to the effect that corporations ought not to be charged with improvements alleged to have been merely for war purposes and not for the traffic of the railroads in question. This division will handle claims of other sorts, including supervision of claims presented to the Interstate Commerce Commission for reparation on account of alleged excessive rates.

The Division of Finance will, of course, have to function actively for a considerable period, and the Division of Law will necessarily have to continue until final settlement or until the eventual transfer of the remaining legal problems to some other governmental agency.

In carrying forward the administrative work incident to these heavy responsibilities, the Railroad Administration is being confronted and will continue to be confronted with the great difficulty of securing and keeping the highly trained experts who ought to deal with this work. The temporary character of the work and the urgent bidding of other enterprises for experts in these matters will make it especially difficult for the Railroad Administration to retain the necessary forces.

Methods Developed Under Federal Control Which Are Worthy of Continuance

The railroads of this country are by necessity a single great system for many purposes, and in the comomn interest ought to be, and I believe by force of circumstances will continue to be, developed more and more to that end.

The rate structures already apply equally to the different railroads; freight cars are already universally interchangeable; railroad labor is largely organized on a nation-wide basis and to a substantial extent working conditions are standardized throughout the country. I believe all these elements of national scope must be accepted, and others must be developed, in order to promote the greatest degree of public convenience.

The methods developed during federal control to regulate the flow of traffic in times of heavy business through diversions of traffic and by means of the application of the permit system, and to regulate the distribution of cars so as to meet the general public need to the best advantage, ought, it seems to me, to be continued. The consolidation of terminals in the common interest is likewise an important element of public convenience and economy which ought to be maintained. I believe the consolidated ticket offices also have not only been economical but have in the main been in the public interest. The transfer of locomotives from one road to another in emergencies, and the use of the shops on one road when available for the work of another road are also measures in the common interest.

The work of establishing uniformity in rules governing car distribution for the various important commodities, such as coal and grain, to avoid unjust discrimination as between shippers has been greatly developed during federal control, and I believe should be continued by the railroads in the public interest. It also seems highly important that every effort be made to continue and extend the pooling of lake and tidewater coal. As to export traffic, it is believed to be highly important that the machinery be available to control this movement to and via ports when conditions make such control necessary through the placing of embargoes and issuing of permits. There are many cases in which it is believed, even under private control, the use of single-track parallel lines as double-track roads which have been developed during federal control can, and properly should, be continued. It also would be distinctly in the public interest if the roads would continue the use of the common time tables between the important centers, and avoid the "bunching" of trains between important centers.

In the mechanical departments of the railroads numerous important practices have been inaugurated during federal control which should be continued after federal control. This is particularly true of the standard classification of repairs to locomotives and tenders set up during federal control, because it affords a reasonably accurate basis of comparison of the work of the different shops and the cost of locomotive maintenance and thereby promotes efficiency.

Naturally the consolidated freight classifications adopted during federal control, many of the simplifications of tariffs and other changes of similar character will be of permanent benefit to the country.

I believe it highly desirable to continue to give the shipping public a participation at the outset in the consideration of rate matters, as is now done on the rate committees, and a participation in the consideration of local operating problems, at least in times of congestion, as is now done on the terminal committees.

I believe it highly important to continue to provide in a systematic way for bipartisan boards of equal representation of the managements and employees to consider grievances of the employees. I earnestly hope for a rapid development of the plan of participation by the employees in the consideration of matters both general and local affecting labor.

The railroad companies have derived important advantages from federal control. In a period when it was difficult in the highest degree to raise money for capital expenditures the companies have been relieved to a very large extent of the necessity for raising any money by reason of the fact that

during federal control the government itself employed its own money for capital expenditure on the railroads and advanced funds to the railroad companies to an aggregate amount in excess of $900,000,000.

Results of Federal Control to Railroad Corporations; Their Status on Resuming Control

During a period when the operating costs of all public utilities were going up much more rapidly than rates were permitted to go up and therefore when all other public utilities were in a state of extreme uncertainty as to their ability to pay established dividends or in many cases pay their regular fixed charges, the railroad companies have been protected by the government's guaranty and, generally speaking, have been able to meet their fixed charges and also their dividends, at least to the full extent that they did so during the three-year test period ending June 30, 1917. In a few cases, railroad companies have suspended or reduced their dividends, but this has been by reason of other conditions than federal control and has been in spite of rather than on acount of the fact that they were guaranteed their income by the government.

As to additions and betterments, including equipment, the situation is that more has been done than would have been practicable under private control in the period of financial difficulty existing during and since the war, and as much has been done as could have been done with the capital available. About $1,200,000,000 has been expended for these purposes.

Congress was unwilling to supply any further capital for these purposes pending decision as to railroad legislation. The railroad companies supplied only about $140,000,000 through funds raised by them and about $180,000,000 through deductions from their compensation. As above pointed out, a most serious need from the standpoint of the public and of the railroad corporations is the expenditure of very large amounts of additional capital for new equipment and additions and betterments to roadway and structures, and especially to shops and terminals.

There has been a somewhat general impression that the railroads during government control have been "scrambled" to such an extent that the resumption of private operation would be difficult. This is not the case. During government control, generally speaking, each railroad has been under separate management and under the immediate direction of a manager identified with its management prior to government control, and from an operating standpoint it will be a simple process on March 1 for such managers to begin reporting to the corporate executives who will then resume active direction. These managers have heretofore reported to the regional directors.

During 1918 there were some instances where different railroads were grouped under a single management, but from time to time during 1919 these railroads have, generally speaking, been segregated by way of preparation for return to private control. Likewise in some instances in 1918 different parts of the same system were put in different regions, but in 1919 most of these cases have been dealt with by putting the entire system under a single regional director. For example, during 1918 the Pennsylvania Lines West and the Baltimore & Ohio Lines West were kept in the Eastern region, with headquarters in New York, but in December, 1918, these lines were put under the jurisdiction of the Allegheny region, with headquarters at Philadelphia, whose jurisdiction also covered the Pennsylvania Lines East. For more than a year, therefore, practically the entire Pennsylvania and Baltimore & Ohio systems respectively have been operating as a whole about as they were prior to federal control.

The corporations have had adequate notice of the return of their railroads on March 1, and as a result most of them have been at work for several months making plans, deciding on the positions to be filled by the various officers, perfecting their soliciting forces, etc. The Railroad Administration has actively co-operated in getting the corporation officers in touch with the conditions on the properties and with the men who are to be employees of the corporations after March 1, and has permitted officers on the federal payrolls to co-operate in building up the organizations to be effective March 1.

In regard to the condition of existing equipment, the locomotives are in relatively good condition, considering that they have just gone through from three to four months of winter weather, much of it severe.

As of February 7, 1920, 11,359 locomotives, or 17.4 per cent, of the total of 65,081 locomotives on the line were in or awaiting shop, and of this number 6,929, or 10.6 per cent, of the total locomotives on the line were in or awaiting shop for classified repairs. Strictly comparable figures of the condition of all the locomotives at the beginning of federal control are not available, but as of January 4, 1918, four days after federal control began, reports covering 49,204 locomotives indicate that 9,105, or 18.5 per cent, were in or awaiting shop. Figures as to the number in or awaiting shop for classified repairs on that date are not available.

Passenger cars are in good and safe condition, although the inability to obtain new equipment for the reasons above explained results in the equipment being on an average practically two years older than at the beginning of federal control, and there has perhaps been some loss in appearance.

The condition of the freight equipment will compare favorably with the condition at the beginning of federal control. As of February 21, 1920, the total number of bad-order cars was 156,150, or 6.1 per cent of the total cars on the line. Included in this number of bad-order cars, however, are 14,275 cars which are held out of service waiting authority from the corporation to retire, as the Railroad Administration does not consider these cars worth repairing. Excluding these cars, the percentage of bad-order cars to total cars on the line is 5.6 per cent, which compares favorably with the number of bad-order cars on hand January 4, 1918, viz., 127,081, or 5.2 per cent of the number of cars on the line.

As to maintenance of way and structures, it is believed that, on the general average, the government has closely approximated compliance with its contract obligation to return the properties in substantially as good condition as when received. On some railroads there has been, especially in 1918, a shortage in the amount of rail, ties or ballast applied in maintenance of the property, this being due to shortage of material and labor, and in various instances it was not practicable in 1919 to make up entirely the shortage which occurred in 1918. But when the proposition is viewed as a whole and consideration is given to the amounts of other kinds of maintenance, it is believed the general statement of approximate compliance with the contracts of the railroads as a whole is correct. Undoubtedly there will be cases where claims for undermaintenance will be allowed and in other cases claims for overmaintenance can be sustained.

From the standpoint of the condition for current operation the roadway and structures are in good working condition, have carried a large traffic for many months and are capable of continuing to do so.

As to the labor situation, railroad employees have become organized to a much greater extent during federal control than prior thereto, although the movement in the direction of additional organization was steadily progressing prior to that time. The train and engine men were organized on practically all railroads for many years prior to federal control. The shopmen and telegraphers were organized on

many railroads, the clerks and station agents on several, and the maintenance of way men on a few. The movement was steadily in the direction of additional organization. I believe the way is open, through frank co-operation with the organizations and the development of appropriate boards of adjustment, for dealing with grievances and the development of increased contact between the management and the employees in other matters of common interest, for establishing better relations between the corporations and the employees than existed between them prior to federal control.

The railroads will go back to private control on March 1 with important wage demands pending. A similar condition, however, existed when the railroads came under government control on January 1, 1918. Formidable demands were then being urged by the principal classes of railroad employees. Moreover, it was generally recognized that wages of many classes of railroad employees at that time were so low that the efficient employees were being lost to a large extent to other industries paying higher wages. The railroad corporations claimed that under the rates then being charged they were not able to pay the necessary wages. It is, of course, understood at present that the entire question of rates is to be shortly reviewed in the light of existing conditions, including the just needs of the railroad employees.

The claims that have been made to the effect that the railroads will be turned back in a broken-down condition are wholly without foundation. As already pointed out, the physical condition of the railroads is good. The fact that some railroads may be able to show a shortage as above mentioned in some of the principal maintenance materials does not keep the railroads from being in effective operating condition. The railroads have been functioning successfully during the present winter, despite its abnormally severe character, and despite the persisting disadvantages growing out of the coal strike.

Complete figures of freight traffic movement for all Class I railroads in January, 1920, are not yet available. However, reports already received from roads which in December, 1919, moved 92 per cent of the total ton-miles indicate that these roads in January, 1920, moved 13.8 per cent more ton-miles than in January, 1919, 26.6 per cent more than in January, 1918, and 7.8 per cent more than in January, 1917.

While complete figures are not available of freight traffic movement in February, 1920, the number of revenue cars loaded on all Class I railroads for the first two weeks of February, 1920, 1919 and 1918, follow:

	1920	1919	1918
Revenue cars loaded	1,590,123	1,392,476	1,450,115
Per cent of increase compared with 1919 and 1918	.....	14.27	9.77

In spite of the bad weather conditions the average trainload was 663 tons, which was 3.1 per cent higher than last January (when unusually favorable weather conditions prevailed), 13.5 per cent higher than in January, 1918, and 8.2 per cent higher than in January, 1917. These preliminary figures indicate that the transportation machine has been functioning satisfactorily under unfavorable conditions.

Since the railroads have been able to function in such a favorable way during the difficult period of January and February, 1920, there is no reason why they should not rapidly make a progressively better showing with improving weather and generally more favorable conditions which are in prospect.

The railroad corporations will resume control at a time when conditions are working distinctly in favor of satisfactory operation. The war resulted in the loss of many experienced employees to other industries, to the general military service and to the railway military service in France. The unrest during and since the war, coupled with changing industrial conditions, led to an abnormal "turnover" of railroad labor and resulted in the same sort of interferences with normal efficiency which have existed and have been commented on in practically every line of industry. The Railroad Administration has felt that these unfavorable influences were gradually disappearing, and there ought to be a gradual continuance of improvement in these respects. The railroad corporations will take the railroads at a time of the year when adverse winter conditions are disappearing and when the physical conditions of operation will rapidly become far more satisfactory, when much heavier trainloads can be moved by the same power, and when difficulties due to ice and snow will be disappearing. The railroads are just emerging from an extraordinarily difficult winter, with a larger aggregate demand for transportation than was ever before experienced in the winter, and during this period they have had to recover as far as possible from the far-reaching dislocations of equipment and also of railroad fuel caused by the coal strike.

A highly important advantage which the railroad corporations will have will be that they are able to plan and put into effect permanent organizations and to make plans accordingly for the future. This is an advantage which the Railroad Administration has not had at any time, and the lack of which has been conspicuously and progressively embarrassing as the end of federal control has approached.

The railroad corporations will also start upon their work with a highly important psychological asset. The public holds to a rigid responsibility any agency performing a public service, regardless of the difficulties of the situation. This responsibility has had to be met during the unparalleled difficulties since January 1, 1918, exclusively by the Railroad Administration, and the railroad corporations have been entirely free from it. They will therefore resume control under the most favorable possible conditions of public sentiment.

Conclusion

These I regard as the results of federal control:

It made practicable a war transportation service that could not have been otherwise obtained; its unification practices have increased the utilization of the inadequate supply of equipment so that an exceptionally large transportation service has been performed in the busy periods of 1919 with a minimum of congestion; it met the emergency of the unprecedented coal strike in a way which private control could not have done and absorbed a heavy financial loss on that account which would have proved highly disturbing to private control; it provided more additions and betterments and equipment than private control could have provided during the difficult financial period of 1918 and 1919; it dealt fairly with labor and gave it the benefit of improved and stabilized working conditions which were clearly right; it not only did not cost more than private control would have cost during the same period but cost considerably less on account of the economies growing out of unifications, and the total burden put upon the public (through rates and taxes) on account of railroad costs was substantially less than would have been necessary if the railroads had remained in private control and rates had been raised enough to preserve their credit; it protected the investment in railroad properties, whereas without federal control those investments would have been endangered; and it turns the railroads back to private control functioning effectively, with a record of exceptional performance in an exceptionally difficult winter, despite the disruption caused by the coal strike, and in condition to function still more effectively with the normal improvement to be expected in the weather and in other conditions.

A final word of appreciation is due to the loyal and steady support of the officers and the great bulk of the employees and their organizations. The times have been exceedingly difficult for officers and employees, and these difficulties have been faced and dealt with in admirable spirit and temper.

Operating Economy of Stoker Fired Locomotives*

A Discussion of the Effect of Stokers on Locomotive Development and Operating Methods

By D. F. Crawford

Vice-President, Locomotive Stoker Company

As there are approximately 5,000 mechanically fired locomotives in the United States, it will be of interest to consider three questions: First, what led to the introduction and continued application of locomotive stokers? Second, what has the experience gained during their development and use indicated? Third, what are the questions brought about by their introduction, which must be considered by the railway officers?

My statement to the convention of the Master Mechanics Association in 1913, contains an answer to the first question. "The development of the locomotive stoker on the

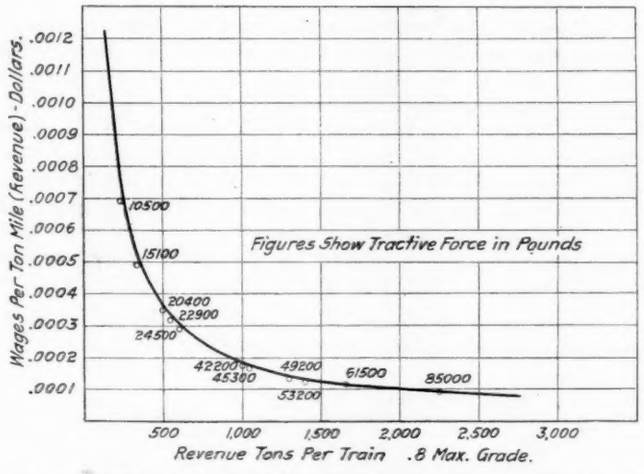


Fig. 1. Relation of Tractive Effort and Tons Per Train to Wages Per Ton Mile (1914 Rates Applied to Various Classes of Locomotives)

Pennsylvania Lines was brought about by a desire to get more tons per train over the road. I had observed in the annual reports of many of the railroads, the tons of train hauled per pound of tractive power for decreasing as the engines grew large. I found that locomotives that were 20 per cent larger than other locomotives were hauling the same trains as the smaller ones and were not realizing the full 20 per cent additional tractive power that the locomotives had. The stoker problem to me was one of decreasing operating expenses by increasing the train load for each unit on which we had to pay interest and maintenance charges."

C. D. Young, after consideration of certain locomotive tests, stated: "If we use 6,000 lb. of coal, and this locomotive is capable of burning 10,000 lb. per hour, or say, if a fireman will fire 6,000 lb. per hour, and the locomotive is capable of burning 10,000 lb. with a stoker, it is then possible for you to obtain the maximum of that locomotive with the stoker, whereas you do not come to 60 per cent of the maximum output with the fireman."

These statements, made in 1913, are of equal value and importance in 1919, and after all are the fundamental reasons for the existence of the locomotive stoker. While what we regard as large locomotives were in limited use before the advent of the stoker, its development and application has and will permit more full utilization of the capital invested both in the locomotive and permanent way.

*Abstract of a paper presented before the Railway Club of Pittsburgh.

Stokers Reduce Transportation Costs

The expense of moving freight does not increase in proportion to the weight of the train, and therefore the larger the train the lower the cost per ton mile. Among the items which may be considered as decreasing in cost per ton mile in some proportion to the increase in tons per train are fuel costs (which amount to 9.85 per cent of the total expenses), crew's wages, equipment, track structure and signal maintenance, as well as certain other fixed and operating charges.

The effect of the introduction of large locomotives on a given division operated to their capacity (which the mechanical stoker makes possible) is shown by the curve in Fig. 1, in which the crew's wages per ton mile are shown in comparison with the revenue tons per train. This indicates what may be expected of locomotives of various capacities.

That there is a definite relation between the coal used per ton mile and the revenue tons per train, is clearly shown by the diagram in Fig. 2, which shows the coal used per ton mile for the various weights of train for nineteen railroads in various parts of the United States, this information

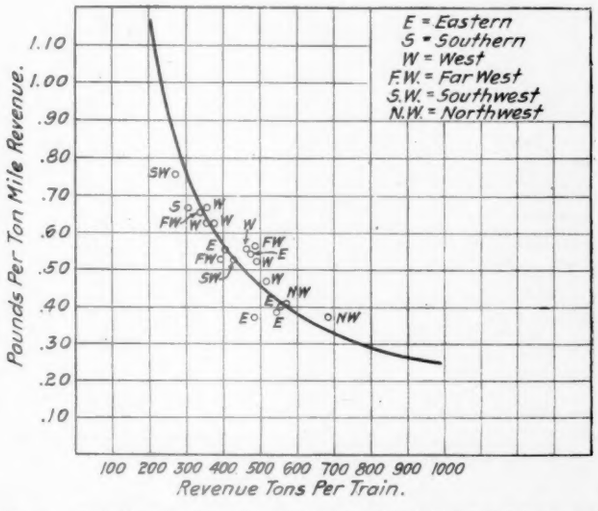


Fig. 2. Relation Between Coal Per Ton Mile and Tons Per Train on Nineteen Typical Roads

being obtained from the annual reports of the railroads included. Notwithstanding the wide variation in traffic, operating, grade and equipment conditions and the quality of the fuels used, the fact that increased train loading brings a decrease in fuel per ton mile is substantiated.

It is, of course, difficult to state in a few words just what the use of locomotives of large capacity has meant to those making use of the transportation facilities of the country, but, by their use the average revenue tons per train in the United States was increased from 176 tons in 1888 to 357 tons in 1907, and 620 tons in 1917.

This increase in the amount of traffic moved by a train unit permitted the results disclosed below:

Year	Revenue tons per train	Receipts per ton mile	Receipts per train mile	Cost of fuel per train mile	Cost of fuel per ton mile: Actual price	Cost of fuel per ton mile: Equated price	Price of coal per ton
1888	176	$0.01001	$1.76	....	.....	.....	....*
1907	357	0.00759	2.71	$0.21	$0.0006	$0.0006	$1.14
1917	620	0.00728	4.51	0.43	0.0007	0.0004	2.20†

Notwithstanding the fact that in 1917 the price of coal is shown as nearly double that in 1907, the cost of coal per ton mile was practically the same, and when the price is equated to that of 1907, the decreased cost per ton mile given shows conclusively that a smaller amount was used.

Heavy Train Loading Increases Track Capacity

Another important reason for the use of locomotives of the capacity made available by mechanical firing is the reduction of the number of units required to handle traffic.

About five years ago query was made as to what would have been the effect if the traffic of a given railway system in the year 1912 had been moved in equipment of the capacity that had been used in 1903. Of course, in making the calculations for the reply, some factors had to be assumed; the conclusions at least indicate the propriety of the increase in capacity of both locomotives and cars.

While a larger number of the smaller locomotives and cars would be required, the fact that the number of units or trains needed so increased the traffic density that, to make the movement with the same degree of promptness as existed in the latter year, the cost of providing additional track facilities far outweighed the cost of the additional equipment. As it is only by the use of a mechanical stoker that the possibilities of large locomotives may be realized, the information given above becomes the reason not only for their development but for their more general application.

Stokers Eliminate Necessity for Two Firemen on Large Engines

In 1903, with locomotives of about 40,000 lb. tractive force and 50 sq ft of grate area, from time to time complaints were received from the firemen regarding their arduous work, and frequently men left the railroad service, preferring to seek a more congenial occupation. This, of course, embarrassed the service, as at times it was difficult to obtain sufficient men to supply the demands, and I well remember the concern of those responsible on account of the large turnover and its effect on the operations. As the size of the locomotives continued to increase, the difficulties and complaints grew apace, and it may be said that the climax occurred in 1912, when the firemen in the Eastern Wage Application demanded two firemen on locomotives weighing over 200,000 lb. on the driving wheels.

During the period mentioned, several types of mechanical stokers had been built and put in service, but were regarded by both the railway officers and employees as rather more than less in the experimental stage. Nevertheless, such was the confidence of some railway officers in the stoker that what may be regarded as the first commercial application of the device was made in 1910. Since that time the number applied per year has gradually increased to the total of 5,000 in use on the locomotives of at least 71 of the railroads of the United States.

Assuming that 120 lb. of coal per sq. ft. of grate per hour is required to obtain the capacity of the locomotives, the average coal rate for typical stoker-fired engines would be as follows:

Mikado	Grate 70.5 sq. ft.	Coal per hour 8,460 lb.
Santa Fe	Grate 83.0 sq. ft.	Coal per hour 9,960 lb.
Mallets	Grate 89.2 sq. ft.	Coal per hour 10,704 lb.

Evidently some locomotives of these dimensions are worked below the capacity suggested by the builders' formula of 120 lb. of coal per square foot of grate area per hour, or certainly there would be more stokers in use.

Even if half the amounts of coal per hour given above were to be fired by hand for any considerable length of time, it is probable that the limit of endurance of the men, especially during the warm seasons, would be approached and therefore the stoker will afford the required relief and will be accepted as a substitute for the second fireman so frequently requested. In fact, I am inclined to believe that in time the stoker will be preferred, as by the use of the stoker the period elapsing from employment to promotion to engineman will not be increased, which would be the case were a second fireman employed on all locomotives.

RESULTS OBTAINED WITH EXPERIENCED AND INEXPERIENCED FIREMEN (HAND-FIRING)

Trial of Coal—Chicago District

All Tests at 80 r. p. m.,—14.66 m. p. h.—25 per cent cut-off. Length of each test, two hours

	Average boiler pressure: Ex	Average boiler pressure: Inex.	Total cost: Ex.	Total cost: Inex.	Total water: Ex.	Total water: Inex.	Steam lost at safety valve: Ex.	Steam lost at safety valve: Inex.	Average smoke per cent: Ex.	Average smoke per cent: Inex.	Brick arch
Macoupin	199.5	198.7	6,526	7,737	19,145	38,571	0	144	30	42	None
Williamson	205.8	205.4	5,762	5,568	39,727	41,482	174	678	24	20	"
Williamson	204.5	204.8	5,970	6,284	42,874	43,457	504	2,992	14	16	Arch
Sangamon	205.1	14.26	5,897	*2,887	40,007	*16,436	0	0	18	52	"
Green	206.0	204.3	5,264	6,442	41,052	41,042	154	1,344	8	25	"
Vermillion, Ill.	204.2	204.5	5,764	7,455	40,557	44,519	304	4,504	22	34	"
Vigo	204.5	203.8	5,480	6,057	39,782	40,807	532	318	20	22	"
Vermillion, Ind.	205.4	203.2	5,445	6,676	40,874	42,534	78	288	16	28	"
Sullivan	203.2	203.2	5,557	8,192	39,514	42,734	0	2,338	28	52	"
Saline	205.0	204.3	4,908	7,263	40,232	42,826	556	3,132	24	64	"
Marion	205.0	184.1	6.146	7,632	40,005	35,393	240	652	14	30	"
Total	2,044.1	2,016.3	56,824	69,306	403,762	413,365	2,542	16,390	200	334	....
Average	204.4	201.6	5,682	6,391	40,376	41,337	254	1,639	20	33.4	....
Present excess	....	....	....	22.0	....	....	....	541.3	....	67.0	....

Ex.—Experienced fireman. Inex.—Inexperienced fireman. *One hour test.
In the total and averages, the figures for Sangamon coal have intentionally been omitted, as two inexperienced firemen failed to maintain the boiler pressure on a one-hour test.

Fuel Economy and Stoker Firing

As it is evident that only the furnace efficiency is affected, whether a boiler is fired manually or mechanically, many of the tests of stoker-fired locomotives which has been made must be disregarded, as the results obtained clearly indicate failure to differentiate between furnace, boiler and engine efficiency.

Indeed, I can only conceive of one reason why under equivalent draft, structural and adjustment conditions a

manually fired furnace should show a better performance than a mechanically fired furnace. That is, that firemen might be able to more accurately distribute the fuel, supplying the fresh coal exactly to the points on the grate required, as indicated by the color of the fire, and I can only think of one reason why the mechanically fired furnace should give the better results, namely, it is unnecessary to so frequenly open and close the furnace door, permitting a more uniform fire-box temperature to be maintained.

It is probable that in locomotive practice each of these theoretical advantages offsets the other, especially at combustion rates approaching the limits of manual firing, beyond which the mechanical device is superior, due to the fact that accurate distribution can no longer be made.

The equivalent evaporation per pound of coal depends on the amount of coal burned per square foot of grate per hour rather than whether the furnace is fed manually or by a mechanical device. As the stoker is applied for the sole purpose of amplifying the output of the locomotive by

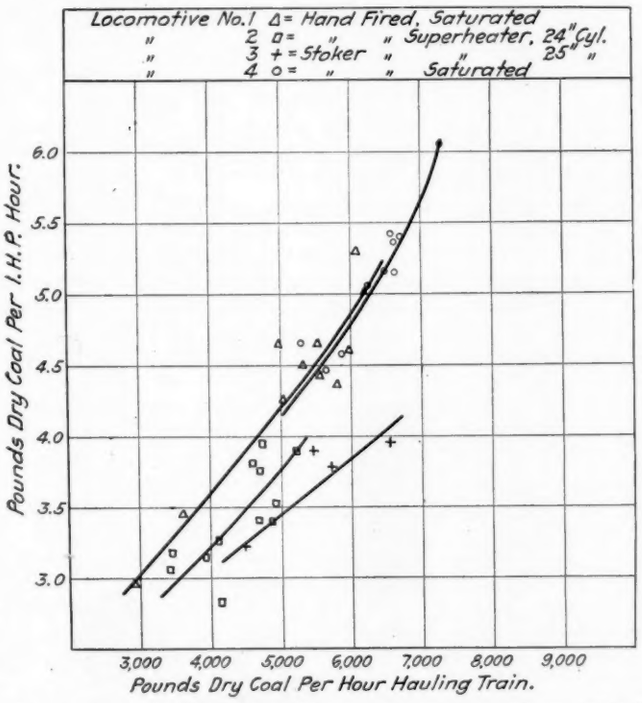


Fig. 3. Coal Used Per Indicated Horsepower Hour, Hand and Stoker Firing

causing more coal to give up the power contained therein, it follows that the evaporation rate will decrease in proportion to the combustion rate obtained.

The coal consumed per gross ton mile cannot be considered in accurate measure of the distance between mechanical and manual firing, as not only are the efficiencies of the boiler and engine variable factors, but the resistance of the train as determined by the number and weight of the cars must be given consideration.

The unit ton miles, while sufficient for rough comparisons, should not be depended upon when the definite information is required.

Although it is true that the pounds of coal per indicator horsepower hour, also involves the performance of the cylinder, by careful selection of the locomotives, as to similarity in engine conditions, this unit may be regarded as fairly valuable in making comparisons.

The diagram in Fig. 3, shows the results of some tests where the information obtained is compared on the last mentioned basis. It will be noted that for the higher rates of combustion, and consequently lower boiler efficiency, the curves indicate that the coal consumption per indicated horsepower hour favors the stoker-fired locomotive, also that when superheated steam is used there is a marked difference in favor of the mechanically fired locomotive. In the latter case, however, the excellent results shown were obtained by increasing the diameter of the cylinder equal to about 10 per cent, as it was found that with the stoker this could be done on account of the ample steam supply. Indeed further experiments justified further increasing the diameter of the cylinders equal to about 17 per cent, with a proportionate gain in hauling capacity.

A possible increase of 17 per cent in the earnings per train mile is surely sufficient to be attractive to those responsible for the financial results of railway operations and to justify the application of a device which permits such conditions.

Fuel Economy Depends on the Fireman

How many of us have taken the trouble to ascertain the effect of coal consumption by inexperienced firemen?

The tabulation gives the results obtained on some tests made to develop the facts. It will be observed that the difference when the locomotive is doing the same work is 22 per cent.

Did it ever occur to you that there are really very few experienced stoker firemen? Why should you expect the same results from inexperienced stoker firemen that you obtained from experience hand firemen? When tests with firemen of equal skill handling the stoker and the shovel show that more coal is being used on the mechanically fired locomotives, you may rest assured that you are getting a return for it either in increased tonnage or increased speed.

Steam Jets Increase Boiler Efficiency

Four of the six types of stokers for locomotives now in service use steam jets to project the coal into the fire-box. It has been stated that the introduction of steam into the fire-box for this purpose results in decreased evaporative efficiency. Just what has led to these statements, I am at a loss to understand, as very early in my railroad experience

EFFECT OF STEAM JETS ON EVAPORATION

WITHOUT BRICK ARCH

Test No.	Coal fired per hour: Total	Coal fired per hour: Sq. ft. grate	Steam through pets, lb.: Per minute	Steam through pets, lb.: Per hour	Equiv. evap. lb.	Per cent lb. steam to lb. coal
79	2,025	69.5	7.56	453.6	8.7	22.3
80	1,786	61.3	12.97	778.2	9.8	43.5
81	827	62.7	0	0	9.3	0.0
82	1,961	67.3	13.78	826.8	8.9	42.0
83	1,961	67.3	17.64	1,058.4	9.1	54.0

WITH BRICK ARCH

Test No.	Coal fired per hour: Total	Coal fired per hour: Sq. ft. grate	Steam through jets, lb.: Per minute	Steam through jets, lb.: Per hour	Equiv. evap. lb.	Per cent lb. steam to lb. coal
84	1,820	62.4	17.64	1,058.4	9.7	58.5
85	1,692	58.0	7.56	456.6	10.4	26.6
86	1,784	62.1	0	0	9.5	0.0
87	1,784	61.2	13.78	826.8	9.5	46.2

Speed—12 M. R. H.—Full throttle—25 per cent cut-off.

I was informed as to the desirabilty of wettng the coal to improve the combustion, and we are all familiar with the wide use of steam jets in stationary boilers, especially those equipped with certain types of mechanical stokers.

In 1912 and 1913 tests were made under the direction of the General Managers Association of Chicago to determine the effect of steam jets on the amount of smoke emitted from a locomotive, and of course one of the factors was the effect on fuel economy.

From the results of these tests published in the American Railway Master Mechanics Association, the data shown in

the tabulation was obtained. The data is supplemented by the following statement: "The tabulated results of the efficiency tests with Pennsylvania Gas Coal (Tests Nos. 2500-79 to 2500-87) with and without the jets are plotted. The curves show that a reduction of smoke results in an increased equivalent evaporation, and a corresponding increase in efficiency and economy with or without the brick arch, showing that the steam jet tubes make for improved combustion and economy rather than simply to "whitewash the smoke."

With this evidence before us, I do not think for the present at least we need be concerned as to the deleterious effect of using steam jets for projecting the fuel into the firebox, for if the use of as much as 1,000 lb. of steam per hour with 2,000 lb. of coal per hour does not result in reduced economy, certainly the introduction of from 300 to 500 lb. of steam per hour into a fire of 5,000 to 7,000 lb. of coal per hour will not adversely affect either the evaporation or the annual balance sheet of the railways using this arrangement.

Slack Coal Not Economical

We all appreciate that one of the arrangements for the introduction of the locomotive stoker was the possibility of using the less expensive grade of coal known as screenings

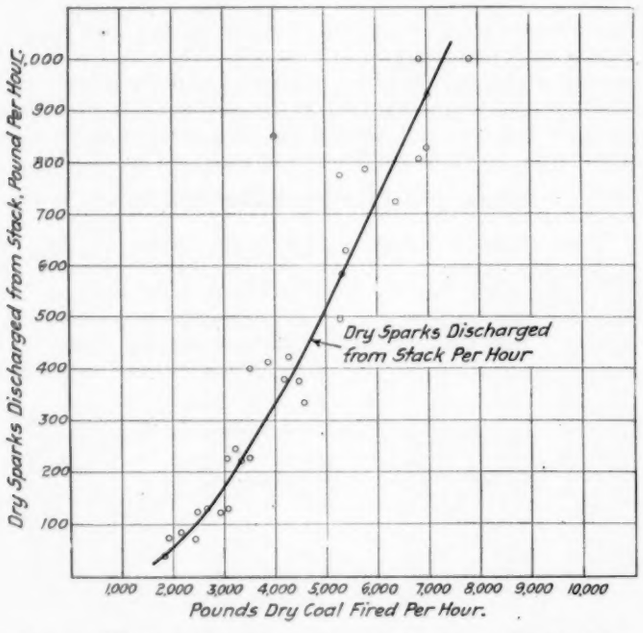


Fig. 4. Relation Between Rate of Firing and Stack Loss, Hand Firing

or slack coal, and consequently a number of stokers especially adapted for its use were installed.

Of course it was expected that the decreased cost per ton would offset the increased consumption, but the practical difficulty not only of supplying the special coal, but the necessity of carrying two kinds of coal at coaling stations, one for hand and one for stoker-fired locomotives, indicated the advantage of a stoker so arranged that it would handle run of mine or even lumps by breaking it to a suitable size on the locomotive.

There is, however, a much more important reason for avoiding the use of screenings or coal of small size than the inconvenience of providing it prepared or crushing it at the coaling stations. That is, the question of quantity used.

Some comparative tests were recently made on stoker-fired locomotives. On one series of tests, coal which would pass through a two-inch screen was used, and the other series made with coal which would pass through a 6-in., but over a 2-inch screen, in the latter case the larger lumps being reduced by the breaker in the stoker conveying mechanism. The advantage obtained in using the larger coal is apparent and amounted to over 15 per cent.

The principal cause, no doubt, of the decreased efficiency of the finer coal is the loss due to the unburned coal being thrown out of the stack. The amount of this loss of course depends upon the rate of firing and the relative fineness of the coal. The diagram in Fig. 4 shows only the relation between the stack losses and the rate of firing.

The stack losses, which run as high as 15 to 20 per cent of the coal fired, have no other relation to the method of firing except that it is the usual practice to fire at higher rates mechanically and manually.

It should be borne in mind that the stoker is a mechanical device; that it will only do what a human being makes it do; that it cannot tolerate neglect. If it is properly inspected, lubricated, maintained and operated, it will add to the earnings of the railroads, the comfort of the employees and banish troubles due to engines not steaming.

FIFTY-SIX CLERKS and other employees of the Pennsylvania Railroad at Harrisburg, Pa., are sleeping at night in Pullman cars and taking their meals at the restaurant in the railroad station. These clerks constitute the office force of the general superintendent of the Eastern Pennsylvania Grand Division, which office was moved on March 1 from Altoona to Harrisburg. Disposing of houses in Altoona and finding living quarters in Harrisburg are both exceedingly difficult propositions, and it is not known how soon the men can abandon their Pullman lodgings.

From the Milwaukee Sentinel

A Solemn Swearing Off

R. H. Aishton Remains President of the A. R. A.

Will Help to Coordinate Operation of Roads During Transition Period. Reorganization of Car Service Commission

For the first time in its history, so far as the *Railway Age* knows, the American Railroad Association has a president who is not an officer of any individual railroad or group of railroads. R. H. Aishton was elected president of the association on its reorganization under government control one year ago. With the termination of government control Mr. Aishton was freed from his duties as regional director of the Northwestern region. The American Railroad Association at the same time passed back into the control of the railroad companies. The advisory committee which was appointed by the Association of Railway Executives to effect the transfer of the American Railroad Association back to corporate control, made a report to the Association of Railway Executives last week in which it recommended that Mr. Aishton be asked to retain the presidency of the American Railroad Association. This was done, and Mr. Aishton has consented to stay. General W. W. Atterbury, vice-president of the Pennsylvania Railroad, is chairman of the advisory committee.

By R. H. Aishton

During the period when arrangements have been under way for the transfer of the railways to private operation, it has been necessary to consider many problems raised by the question as to what policies and organizations established under government control should be continued under private control. The Interstate Commerce Commission, under the new railroad legislation, is given large powers over the distribution of freight cars and other features of operation, and it is necessary to ascertain the wishes of the commission with respect to these matters. Mr. Aishton, as a regional director, became thoroughly familiar with the organization and workings of the Railroad Administration, and as president of the American Railroad Association he is in a good position to make recommendations as to what functions which have been performed by the Railroad Administration should be performed in future by the American Railroad Association. For example, at the request of all parties concerned, he has taken the lead in reorganizing the Commission on Car Service, and having it transferred from the Railroad Administration to the American Railroad Association.

It is recognized by all executive officers of railroads that there will be many other important operating problems to be solved for whose proper solution both the railroad corporations and the Interstate Commerce Commission will have a large responsibility, and that the part of the railroad companies in solving these problems should be placed in the hands of a railway man of sufficient rank, experience, prestige and ability to deal with all the problems involved. It is understood that the arrangement for Mr. Aishton to devote his energies almost exclusively to the work of the American Railroad Association has been made, at his request, only temporary. How long it will be continued doubtless will depend upon future conditions and upon Mr. Aishton's willingness to continue in his present position.

No man better equipped for the work which Mr. Aishton has undertaken could possibly have been found. He originally entered railroad service in the engineering department of the Chicago & Northwestern. After seventeen years' experience in the engineering department he became an assistant superintendent, and was thereafter successively division superintendent, general superintendent, assistant general manager, general manager, and vice-president in charge of operation and maintenance of that road. In May, 1916, he was elected president of the Northwestern. When the Railroads' War Board was organized in April, 1917, it divided the railways of the country into departments corresponding to the various divisions of the War Department. A committee of railway executive officers was appointed to direct and coordinate the operation of the railways in each of these departments, and Mr. Aishton was made chairman of the executives' committee for the Central department. No railway officer did more able or effective work than he did, while the Railroads' War Board was in charge, to bring about needed co-operation between the railways themselves and to secure the support of the public for the railways in their efforts to handle the maximum amount of business.

When the Railroad Administration originally was organized it divided the country into three regions—Eastern, Southern and Western—and Mr. Aishton accepted the regional directorship of the Western region. Subsequently, when the Western region was divided into three regions he became regional director of the Northwestern region, which included the terminals in Chicago. Here again he made a record for loyal, able and effective work, which was unsurpassed by any man who went into the service of the government. His administration of the affairs of the Northwestern region won for him the praise, not only of the railway officers in his region and of the Central department at Washington, but also to a very unusual degree that of the shipping public.

During the weeks, or even the months, immediately following the resumption of private operation there will be many prob-

lems to solve rising out of the relations between the railways and the regulating authorities, and also between more or less conflicting interests of the railroads themselves. Mr. Aishton's personality, as well as his great experience and ability as an operating officer, and will enable him to render service of great importance in solving these problems.

A. R. A. Establishes Car Service Commission

The work of the Car Service Section of the Railroad Administration, which was in a general way a continuation of that of the Commission on Car Service maintained by the American Railway Association in Washington before federal control, is to be continued under a plan adopted by the Advisory Committee, Association of Railway Executives, and the Executive Committee of the American Railroad Association, by the establishment for a 60-day period, or until such time as a permanent organization may be determined upon by the association, of a Commission on Car Service at Washington, under the chairmanship of W. C. Kendall, who has been manager of the Car Service Section and who was also a member of the former commission. He was formerly superintendent of transportation of the Boston & Maine.

A large part of the organization of the section has also been retained and the commission was prepared to begin functioning on March 1. The other members of the commission are: A. G. Gutheim, commissioner at large; W. J. McGarry, commissioner representing the territory comprising the original eastern region; W. L. Barnes, commissioner representing the original Western region, and J. T. King, commissioner representing the territory comprising the original Southern region. Because of Mr. King's illness, H. J. German will take his place temporarily. Mr. Gutheim, Mr. McGarry, Mr. Barnes and Mr. German have all been assistant managers of the Car Service Section. Mr. Gutheim was formerly attorney examiner for the Interstate Commerce Commission and was one of the commission's representatives selected to sit in with the A. R. A. Commission on Car Service before federal control. Mr. McGarry was formerly superintendent of transportation of the Lehigh Valley. Mr. King was general superintendent of transportation of the Atlantic Coast Line, a member of the former commission on Car Service and later operating assistant to the Southern regional director. Mr. Barnes was formerly superintendent of transportation of the Chicago, Burlington & Quincy, was a member of the former Commission on Car Service, and has been in charge of the Car Service Section's refrigerator and tank car office at Chicago.

The duties of the commission will include the administration of the car service and per diem agreement adopted by the American Railroad Association, the relocation of equipment between railroads, and the maintaining of relations with the Interstate Commerce Commission with respect to car service. Its authority is derived from its appointment by the executive committee of the American Railroad Association in acordance with Per Diem Rule 19, and from the following car service and per diem agreement subscribed to by the railroad companies:

Car Service and Per Diem Agreement.

"The subscribing railroad company promises and agrees with each railroad company severally which subscribes and files a counterpart hereof with the general secretary of the American Railroad Association, that the subscriber will abide by and enforce the rules prescribed for the handling of and settlement for freight cars and included in the Codes of Car Service and Per Diem rules, promulgated by the association.

"Further, that the subscribing railroad company agrees to the creation of a Commission on Car Service with plenary powers as provided in Per Diem Rule 19, and which commission shall be established and maintained at Washington, and shall co-operate with the Interstate Commerce Commission in all car service matters on and between all railroads, and generally to act for the subscriber as its agent in all such car service matters as fully and as effectually as could the subscriber.

"Further, that the said Commission on Car Service is hereby designated and appointed as the agent of the subscribing railroad company, upon which service of all orders and directions with respect to car service, in accordance with the provisions as to car service of the act to regulate commerce in force at the time, may be made by the Interstate Commerce Commission for and in the subscriber's behalf; a duplicate original of this agreement being filed by the subscriber with the Interstate Commerce Commission to evidence such designation.

"This agreement to continue until withdrawn by three months' previous notice in writing to the general secretary of the association."

A careful survey has been made of the necessities of the case and a reduction has been made in the expense of handling the commission at the rate of $174,830 per annum.

The Car Hire Bureau at Buffalo, the Eastern and Western coal car pool and the Refrigerator Car Pool, all maintained by the Railroad Administration, have been discontinued as of February 29 by notification to the individual railroads. The Railroad Administration is to carry on such organization as is necessary to close up their work.

The organization of the Commission on Car Service has been made temporary because of the prospective reorganization of the American Railroad Association. The Troop Movement Section of the Railroad Administration is also to be continued temporarily as the Troop Movement Bureau.

R. H. Aishton, president of the American Railroad Association, and J. E. Fairbanks, general secretary and treasurer, have been in Washington for several days this week holding conferences regarding the work of the new commission and the plans for handling car service matters were taken up by Mr. Aishton and Mr. Kendall at a conference with members of the Interstate Commerce Commission, at which the details of the arrangement were discussed in detail.

For the present the Car Service Commission will retain the offices of the Car Service Section in the Premier building, on Eighteenth street, across the street from the Interstate Commerce building.

A meeting of the representatives of the Telegraph and Telephone division of the American Railroad Association was also held for the purpose of arranging telegraph facilities for the commission.

The new arrangement contemplates an important change in the character of the work of the car service organization by placing as few restrictions as are necessary on the individual distribution of equipment by railroads and by removing the activities of the commission from relation to the service on any particular railroad. The elimination of the refrigerator and coal car pools is intended to place upon the individual railroads the responsibility of furnishing refrigerator and coal car equipment to meet their necessities on the theory that the maintenance of such pools, as they have been administered under the direction of the Car Service Section, would have a tendency to absolve individual roads from responsibility for addition to their equipment. It is the understanding with the Interstate Commerce Commission that the Car Service Commission will not be expected to handle complaints from individual shippers as to service or a shortage of equipment at any particular point on any particular railroad. It is said that the Car Service Section had developed into a complaint bureau, because any individual shipper complaining to the Car Service Section usually had his complaint referred back to the individual railroad for a reply that could just as well have been made to him direct in the

first instance if he had carried his complaint through to a conclusion with the officers of the individual railroad. It is desired to leave the Commission on Car Service free for the larger problems of car distribution.

It is understood that the Interstate Commerce Commission is to organize a car service bureau but that for the present it will have only a skeleton organization and will confine its activities largely to co-operating with the railroad commission in the same way as its bureau did in 1917.

The codes of car service and per diem rules promulgated by the American Railroad Association which went into effect on March 1 are as follows (footnotes and interpretations omitted):

1. The rate for the use of freight cars shall be 90 cents per car per day, which shall be paid for every calendar day, and shall be known as the per diem rate, except that where per diem is not reported to car owner within four (4) months from the last day of the month in which it is earned, the rate shall be increased fifteen (15) cents per car per day.

2. Days shall be reckoned by subtracting the date of receipt from the date of delivery. The day of receipt shall be disregarded, and payment made for day of delivery.

A road receiving and delivering a car on the same date shall not pay the per diem for that day.

Records of receipt and delivery under this rule shall be those obtained from the reports provided for in Rule 9.

3. Freight cars must be handled as prescribed by Rules 1 to 5, inclusive, of the Code of Car Service Rules of the American Railroad Association.

4. Each railroad, including ferry lines, shall be responsible to the car owner for amounts accruing for the use of a car at the established per diem rate, whether such car is in road or switching service.

5. An arbitrary amount for each car in switching service may be reclaimed by each individual switching line from the roads for which the service was performed. This amount shall be based upon the average number of days, not to exceed five, actually required in such switching service, to be determined annually by an examination of the records of each individual switching line by the roads directly interested for each local territory.

No reclaim shall be allowed for an intermediate switching movement.

No reclaim shall be allowed under this rule to a non-subscriber.

6. In case a subscriber delivers a car of another subscriber to a non-subscriber it shall pay to the owner an amount equal to the per diem accruing on the car while on such non-subscriber road. The owner will accept settlement for the use of the car only from the delivering subscriber which shall make settlement with the non-subscriber.

7. When a car has been destroyed and reported under Section III—Mechanical (M. C. B.) Rules the per diem shall cease from the date of notice to owner.

8. (a) When a car is detained awaiting the receipt of repair material, which under Section III—Mechanical (M. C. B.) Rules must be obtained from the owner, the per diem shall cease from the date the necessary material is ordered from the owner until the date on which it is shipped in the manner prescribed by Section III—Mechanical (M. C. B.) Rule 122, as evidenced by carrier's shipping receipt.

(b) When a car is reported to its owner under Section III—Mechanical (M. C. B.) Rule 120 Per Diem shall cease from date of such report.

If owner authorizes the repair of such car, and no repair material is required from owner, per diem shall begin after repairs are completed, but in no case to exceed 60 days from the date such authority is given. If repair material must be obtained from the owner under Section III—Mechanical (M. C. B.) Rules, per diem shall begin after repairs are completed, but in no case to exceed 60 days from date such authority is given, plus the number of days intervening between the date necessary material is ordered and the date on which material is shipped in the manner provided by Section III—Mechanical (M. C. B.) Rule 122, as evidenced by carrier's shipping receipt.

(c) Under paragraphs (a) and (b), if more than one order for material is made, the first order only shall stop the per diem.

9. (a) The Interchange reports shall be made for each calendar day on the prescribed form (B-1) Columns 2, 3, 4, 5 and 9 shall be filled. They shall close as of midnight and shall include all cars delivered on the date for which made.

(b) Corrections to Interchange reports shall be made on the prescribed form (Q) immediately upon the discovery of errors in reports which have already been forwarded to Car Service Officers; otherwise corrections to be made on all copies of Interchange Reports before forwarding.

(c) Both Interchange and correction reports shall be made in quadruplicate by the use of carbon paper, two copies for each road involved, and shall be numbered consecutively for each connecting line, commencing with the first of each month; a separate series of numbers to be used for each form of report.

(d) The report shall be signed by the proper representative of the delivering road and certified to by the proper representative of the receiving road after checking. The original with one copy shall be returned to the road making the report.

(e) Car Service Rule 6 governs the delivery of cars. The date and time of delivery of cars upon interchange tracks of connecting line shall, *prima facie*, be the date and time given the delivering road. In cases where there are different standards of time at a junction, the time of the more easterly reckoning shall govern.

10. The Junction Report for each day shall be made to car owners on the prescribed form (40) or on the cut-up interchange slips, as promptly as possible after the receipt of the Interchange Report for that day, but not later than the close of the second working day following the receipt of the Interchange Report.

11. (a) Within forty days after the end of each calendar month, car owners shall be furnished with a Per Diem Report for that month, on the prescribed form (G), showing the number of days each car has been in service upon the road making the report.

(b) Claim covering errors or omissions in Per Diem Reports shall be presented after four months and within seven months from the last day of the month in which the Per Diem was earned. This will not prevent the continuance of any case after the period named, if it has been previously opened, even though the claim should eventually rest upon some road other than the one originally addressed, except that the privilege of continuance shall cease when claimant fails to return claim or present it to another road within a period of two months from the date such claim is last returned to claimant.

(c) Each claim shall be adjusted or handled in accordance with the provisions of O.M. 30 within 30 days after its receipt from the claimant or another road. If not so adjusted or handled the claimant shall send to the delinquent road with its first or second Per Diem Report issued after expiration of the time limit of 30 days, a copy of each claim not so adjusted or handled, and shall show on the summary of the Per Diem Report the number of such claims enclosed and the total number of days covered thereby. If claimant fails to send such copy in accordance with the provisions of this paragraph the privilege of continuance of claim shall cease.

(d) The delinquent road shall adjust or handle each claim in accordance with the provisions of O.M. 30 within 30 days after receipt of the copy of claim referred to in paragraph (c). If it fails to do so, it shall allow the claim in full in the Per Diem Report next issue, following the expiration of the time limit of 30 days, otherwise the claimant may take credit for the full amount of such claim in its next Per Diem Report to the delinquent road.

(e) When Per Diem has been reported to other than car owner, which fact is developed in the investigation of a claim for short Per Diem, the reporting road shall be responsible to car owner for Per Diem earned and shall have the privilege of continuing such claim for refund of Per Diem from the road to which it was thus incorrectly reported. When the Per Diem has been reported car owner under incorrect initial or number, which fact is developed in the investigation of a claim for short Per Diem, the reporting road shall have the right to transfer the allowance from the incorrect to the correct initial or number as an offset to the claim.

(f) Six months after the effective date of this rule it shall

become applicable to all unadjusted claims for Per Diem earned prior to (insert effective date of these rules).

12. The settlement of amounts accruing for the use of cars shall be made monthly without regard to reclaims pending.

13. (a) Switching reclaim under Rule 5 shall be presented within three months from the last day of the month in which the Per Diem accrued, and shall be allowed as presented within 30 days after receipt.

The road paying the reclaim may present a counter reclaim to adjust errors in the original reclaim statement, provided such counter reclaim is presented within two months from the last day of the month in which the original was received.

The privilege of continuance of the counter reclaim shall cease when either road interested fails to return it to the other road within two months from the last day of the month in which it was last received, the delinquent road to be responsible for the unadjusted amount.

(b) Reclaim under Rule 15 shall be presented within six months from the last day of the month in which cars were delivered by the holding road. The road receiving reclaim shall check and present exceptions to the claimant within four months from the last day of the month in which the reclaim was received and shall allow in the next Per Diem Report the amount not covered by exceptions.

The privilege of continuance of reclaim thereafter shall cease when either road interested fails to return it to the other within two months from the last day of the month in which it was last received, the delinquent road to be responsible for the unadjusted amount.

(c) Special reclaim shall be presented within twelve months from the last day of the month in which the Per Diem accrued. The road receiving reclaim shall check and present exceptions to the claimant within four months from the last day of the month in which the reclaim was received, and shall allow in the next open Per Diem Report the amount not covered by exceptions.

The privilege of continuance of reclaim thereafter shall cease when either road interested fails to return it to the other within two months from the last day of the month in which it was last received, the delinquent road to be responsible for the unadjusted amount.

(d) The provisions of paragraphs (a), (b) or (c) will not prevent the continuance of any reclaim after the period named if it has been previously opened when the reclaim eventually rests upon some road other than the one originally addressed, except that the reclaim shall be presented to such other road within two months from the last day of the month, in which it was last received by claimant. Further handling shall be subject to the provisions of paragraphs (a), (b) and (c).

(e) If a road fails to adjust or handle a reclaim in accordance with this rule the claimant shall give notice thereof sufficient to establish its identity on the summary of its next Per Diem Report to the delinquent road, and if not adjusted or handled within thirty days thereafter may take credit for the unadjusted amount of such reclaim in its next Per Diem Report to the delinquent road.

(f) Reclaims shall be made by the designated officer of the road which pays the Per Diem to the designated officer of the road from which the allowance is reclaimed, unless specifically agreed by the interested roads to permit the presentation and acceptance of such reclaims by local representatives.

14. When a freight car is detained by reason of a railroad error, which prevents proper tender or delivery, prompt notice must be given and action taken by the holding road to secure the release of car, and the erring road will pay to the holding road an amount equal to the established Per Diem rate for the time such car is held. Claims under this rule to be made on the erring road within twelve months from the date succeeding that on which car is received. (See Rule 13, Paragraph (c)).

NOTE.—This rule applies to cars of railroad ownership, including owner's cars on owner's tracks, but it does not apply to cars bunched in transit, nor cars detained account of weather interference.

15. (a) A road failing to receive promptly from a connection, cars on which it has laid no embargo, shall be responsible to the connection for the Per Diem on cars so held for delivery, including the home cars of such connection.

(b) If such failure to receive shall continue for more than three days, the delinquent line shall thereafter in addition be responsible for the Per Diem on all cars wherever in transit which are thus held back for delivery.

(c) It shall be the duty of the connection intending to reclaim to notify the delinquent line daily, prior to midnight, through the designated transportation officer or in such manner as may be agreed upon locally, of the total number of cars so held for it, and on the following day furnish the initials and numbers of the cars.

(d) When the hour at which the receiving road clears the interchange track is so late that the delivering road cannot place on interchange track before midnight, cars which it is holding for delivery, the receiving road shall be responsible for the Per Diem on such cars for the following day, subject to local agreement as to time required to make delivery.

16. (a) When a road gives notice that for any reason it cannot accept cars in any specified traffic, thereby laying an embargo, it should receive cars already loaded with such traffic on the date such notice is issued, and cars loaded within twenty-four (24) hours thereafter. If it does not receive such cars the road laying the embargo for the number of days such cars are held, not exceeding the duration of the embargo.

(b) Embargoes must be issued by the embargoing road in accordance with the provisions of the Embargo Regulations as approved by the American Railroad Association.

(c) Twenty-four hours after 11.59 P. M. of the date of the embargo a road must not load or reconsign cars in such traffic to the embargoing road.

(d) An embargo may not be laid on empty cars returning home in accordance with the Car Service Rules.

17. To interpret these rules and to settle disputes arising under them an arbitration committee of five members shall be appointed by the general Committee, Section V—Transportation. Three members of the arbitration committee shall be a quorum. In case any question or dispute arises under these rules it may be submitted to the arbitration committee through the general secretary of the association in abstract. The abstracts shall briefly set forth the points at issue and each party's interpretation of the rules upon which its claim is based. The arbitration committee shall base its decision upon the rules and the abstract submitted, and its decision shall be final. Should one of the parties refuse to furnish the necessary information, the arbitration committee shall use its judgment as to whether it can properly decide. All decisions shall be reported to the association through the General Committee, Section V—Transportation.

In case a question shall arise not covered by the rules the roads disagreeing may by mutual consent submit such questions to the arbitration committee.

The General Committee, Section V—Transportation, may appoint a secretary for the arbitration committee, who shall be paid by the association. The other expenses of the arbitration committee shall be divided equally between each of the parties to the dispute and the association. The minimum charge to each road shall be $10, payable in advance. The expenses shall be first paid by the association, and then billed to the parties concerned by the treasurer of the association.

18. These rules shall not apply to private cars or to cars of non-subscribers.

19. The executive committee of the American Railroad Association shall appoint a commission on car service composed of a chairman and the requisite number of members, territorially representative, invested with plenary power to—

(a) Supervise the application of car service and per diem rules.

(b) Suspend or permit departures from Car Service Rules 1 to 5, inclusive, except as provided in Rule 20.

(c) Exempt when necessary, cars of any type, from the provisions of Car Service Rule 1 to 5, inclusive, and provide other regulations under which such cars shall be handled.

(d) Transfer cars from one railroad or territory to another when necessary to meet traffic conditions, with due regard to car ownership and requirements.*

*This provides an adjustment of surplusages and shortages, and is intended to suggest an equalization of service so far as practicable and consistent with car ownerships. By the latter is meant that if one railroad has in its good judgment provided amply for its coal-loading patrons, for example, while another has not, and the demand is generally equal to supply, the mines of the first will not necessarily be depleted in order that the mines on the improvident road may be the better served. Generally as between the provident and improvident roads it must be recognized that if

(e) Conduct investigations, including examination of car records, as may be necessary to insure the observance of Car Service and Per Diem rules and of any orders issued by the Commission Car Service, and in the event that they are unable to adjust such matters with the individual railroads, report all the facts with a recommendation to the executive committee.

(f) Obtain car location statements and other car performance statistics as deemed necessary.

(g) Take necessary action to bring about uniformity of practice among railroads, by the standardization of car distribution rules, including record and report forms.

(h) Make recommendation to the executive committee when in their opinion a change in the per diem rate is necessary or desirable.

(i) To perform such other duties as may be assigned by the executive committee.

The headquarters of the commission provided for by this rule shall be Washington, D. C.

20. Departure from Car Service Rules 1 to 5, inclusive, affecting Canadian railway cars on United States Railroads, or United States railroad cars on Canadian railways, shall be only by agreement as between the American Railroad Association and the Railway Association of Canada.

American Railroad Association

Code of Car Service Rules

1. Home cars shall not be used for the movement of traffic beyond the limits of the home road when the use of other suitable cars under these rules is practicable.

2. Foreign cars at home on a direct connection must be forwarded to the home road, loaded or empty, or may be returned empty to the road from which last received loaded, if such road is a direct connection of the home road. Under this rule cars may be—

(a) Loaded via any route so that the home road will participate in the freight rate, or

(b) Moved locally in the direction of the home road, or

(c) Moved locally in an opposite direction from the home road, or delivered to a short line or a switching road, if to be loaded for delivery on or via the home road.

3. Foreign cars at home on other than direct connections must be forwarded to the home road loaded or empty. Under this rule cars may be—

(a) Loaded via any route so that the home road will participate in the freight rate, or

(b) Loaded in the direction of the home road, or

(c) Moved locally in an opposite direction from the home road, or delivered to a short line or a switching road, if to be loaded for delivery on or via the home road, or to a point in the direction of the home road beyond the road on which the cars are located, or

(d) Delivered empty to the road from which last received loaded if such road forms a part of a direct route to the home road, or

(e) Delivered empty to a road forming a part of a direct route to the home road, but subject to equalization of interchange balances monthly, by classes, at each junction point. In computing cars to determine the interchange balances, all cars interchanged during the preceding two months shall be counted, classified as open top or closed cars.

NOTE—Under this rule a road shall not be privileged to deliver to another road, empty cars to avoid its responsibility in connection with return movement via a direct route of which it may form a part.

4. Empty cars may be short routed at a reciprocal rate of 5 cents per mile, plus bridge and terminal arbitraries, with a minimum of 100 miles for each road handling the car, the road requesting the service to pay the charges.

5. If a movement of traffic requires return of empties via a junction at which cars were delivered loaded, the delivering road may demand return of empty cars at such junction, except that cars offered to a home road for repairs, in accordance with Section III—Mechanical (M. C. B.) Rules, must be accepted by owners at any junction point.

6. Cars shall be considered as having been delivered to a connecting railroad when placed upon the track agreed upon and designated as the interchange track for such deliveries, accompanied or preceded by proper data for forwarding and to insure delivery, and accepted by the car inspector of the receiving road.

Unless otherwise arranged between the roads concerned the receiving road shall be responsible for the cars, contents and per diem after receipt of the proper data for forwarding and to insure delivery, and until they have been accepted by its inspector or returned to the delivering road.

7. When trains of one railroad use the tracks of another in avoiding washouts or other obstructions, unless other arrangements exist between the roads concerned, the detour shall be made under the terms of the Detour Contract approved by the association, which terms are made part of this rule.

The road for which the train is detoured shall pay the regular per diem (or mileage) to the owners of the cars in the train, including the road owning the track, if any of its cars shall be in the detoured train. All mileage charges shall be at actual distance over the route used.

8. The following rates for the use of passenger equipment shall be in force unless otherwise arranged between the roads concerned:

SECTION A.

JOINT SERVICE RATES.

These rates are to apply when the owners of the cars participate in the business and not when the cars are hired to other lines:

Class of cars	Basis of rate: Seating capacity	Basis of rate: Length of car	Basis of rate: All capacities	Rate per mile of actual distance
Coaches, Chair cars	Under 70			$0.03
	70 to 86			.04
	Over 86			.05
Tourist, Colonist, Dining, Cafe, Club, Parlor			All	.03
Combined — passenger and baggage, or passenger, baggage and mail		Under 60 ft.		.03
		60 ft. and under 70 ft.		.04
		70 ft. and over.		.05
Postal, Baggage, Express		Under 60 ft.		.01½
		60 ft. and under 70 ft.		.02
		70 ft. and over.		.02½
Baggage—express, Mail storage, Baggage—mail		Under 60 ft.		.02
		60 ft. and under 70 ft.		.03
		70 ft. and over.		.04
Baggage — mail — express				

SECTION B.

PER DIEM RATES.

These rates are to apply when cars are hired at other than mileage rates and when the owners of the cars do not participate in the business; but are subject, however, to agreement between the parties interested.

Class of cars	Basis of rate: Seating capacity	Basis of rate: Length of car	Basis of rate: All capacities	Per diem rate
Coaches, Chair cars	Under 70			$5.00
	70 to 86			7.00
	Over 86			8.00
Tourist, Colonist, Dining, Cafe, Club, Parlor			All	5.00
Combined —passenger and baggage, or passenger, baggage and mail		Under 60 ft.		5.00
		60 ft and under 70 ft.		7.00
		70 ft. and over.		8.00
Postal, Baggage, Express, Baggage—express, Mail storage		Under 60 ft.		3.00
		60 ft and under 70 ft.		4.00
		70 ft. and over.		5.00
Baggage—mail		Under 60 ft.		4.00
		60 ft and under 70 ft.		6.00
Baggage—mail—express		70 ft. and over.		7.00

9. When a per diem rate is charged for the use of passenger equipment, as provided for in Rule 8, the total number of hours of all cars of the same class shall be calculated on a basis of 24 hours for each day and the charge made accordingly; any fraction of a day over the aggregate number of days of 24 hours

in the time of great car demand the latter has to be assisted for the benefit of its patrons and its territory at the expense of the former, there must necessarily be set up some method of compensation for the former, and this of necessity, may go beyond mere car hire. In treatment of "short lines," or "feeders," without any appreciable car ownership, such lines must be given a measure of car supply from "trunk lines" consistent with current distribution percentages on such trunk lines; in other words, they must be treated as industries on the trunk line connection.

each to be counted as one day; it being understood that the minimum charge shall be one day for each car.

When necessary to haul a car empty over the road owning it, or intermediate roads for delivery to a borrowing road, unless otherwise arranged between the roads concerned, the borrowing road shall pay a reciprocal rate of 10 cents per mile for hauling the car, plus bridge and terminal arbitraries, to the point of connection with the borrowing road and return; the charge for the empty haul to be named to the borrowing road at the time the agreement to loan the car is made.

10. Each railroad shall adopt the "National Car Demurrage Rules," as approved by the American Railroad Association.

11. (a) All freight cars shall be light-weighted as follows, and shall be marked in accordance with Section III—Mechanical (M. C. B.) Rules with the following marks:

(1) The light weight, which shall be the multiple of 100 pounds nearest the scale weight, except that when the scale weight indicates an even 50 pounds the lower multiple shall be used.

(2) Capacity in pounds. Cubical capacity except for flat and tank cars.

(3) Station symbol.

(4) Date of weighing, month and year.

(b) Each new car must be weighted separately and marked at the car works, under the supervision of the owner's inspector. The accuracy of the scales used must be certified to by a railroad scale inspector appointed by the car owner.

These provisions to be incorporated in the contract covering the purchase of the equipment.

(c) Wooden and steel underframe cars (except refrigerator cars) should be re-weighed and re-marked each year during the first two years the car is in service, and thereafter once every two years. All-steel cars and all refrigerator cars should be re-weighed and re-marked at least once every three years. This weighing should be done at any favorable time during the year in which the car is due to be weighed, regardless of the month in which the previous weight was obtained. This paragraph does not apply to tank cars.

(d) When a car is materially changed by repairs, alterations or re-painting, it should be re-weighed and re-marked. (See paragraph (f) (8).)

(e) Any car without marking should be immediately weighed and marked. Any car (except tank cars) which has not been re-weighed and re-marked within the prescribed period should be immediately re-weighed and re-marked. If a car (except tank cars) is re-weighed at any time and is found to have a variation of 300 pounds or more (for refrigerator cars, 500 pounds or more) between the marked and actual weight, it should be immediately re-marked.

(f) (1.) When empty cars are received in yards for inspection for defects or while empty cars are on shop tracks for repairs, there should be selected the cars whose condition and whose date of last weighing, etc., indicate that they should be re-weighed and re-marked. The number of cars selected will be regulated in accordance with the facilities and traffic conditions.

(2.) The initials and numbers of cars selected, also old light-weight marks, shall be reported to the weighmaster on the prescribed blank.

(3.) Cars should then be cleaned and swept out under the supervision of the yardmaster or some one especially designated.

Cars should be dry and free from snow, ice, false floors, removable stakes, posts, or anything else affecting the weight.

(4.) Missing parts, such as side or end doors, or parts peculiar to certain types of cars should be replaced and included in the marked weight.

(5.) Temporary double decks in stock cars should be removed before cars are weighed.

(6.) The old light-weight stencil marks should be entirely painted out with quick-drying paint.

(7.) Before cars are weighed the accuracy of the scale must be regularly certified by the scale department, scale must be properly balanced and free from interference and the weighmaster must know that cars are clean.

(8.) Cars should not be light-weighed during rain, snow, sleet or heavy winds; except that when cars have been materially changed by repairs, alterations or repainting they must be weighed, even if it is necessary to do so under unfavorable weather conditions.

(9.) Cars should be light-weighed at rest, uncoupled and free at both ends.

(10.) The weights of the cars so obtained should be furnished immediately on the prescribed blank to the car maker, who will mark the cars as provided in Paragraph (a). When desired, any portion of the marks which will not be changed may be marked on the car before re-weighing.

(11.) Complete reports of such re-weighing and re-marking should be forwarded on prescribed form (A)† to the designated transportation and mechanical officers and a copy retained by the weighmaster.

(g) When a car is re-marked the car owner should be notified of the old and of the new weights, with place and date. The proper officer to whom these reports should be made will be designated in *The Official Railway Equipment Register.*

(h) Whenever a weighmaster at a point not equipped for marking freight cars, as provided in paragraph (e) ascertains, as per paragraph (f), the light weight of a car which is not marked in accordance with this rule, he shall attach to the car the prescribed "Light Weight Card" with the light weight and send two copies of the card to the designated officer of the railroad on which the scale is located, one copy to be sent to the owner of the car. The presence of the Light Weight Card on the car shall be authority for re-marking the car at the first available station.

(12.) The placing of advertisements or placards of any kind by shippers upon freight cars is prohibited.

(13.) When private tank cars are unloaded, the owner will issue instructions for empty movement to the agent at point of unloading either direct or through consignee. The agent will bill (†) each car to final destination, showing name of the consignee and full route, using standard form of Revenue Way Bill. The word "consignee" in this connection signifies the party to whom the empty tank car is forwarded. (See Notes 1 and 2.)

(14.) Unless otherwise agreed, the cost of transferring the lading of freight cars or rearrangement of lading at junction points shall be settled as follows:

First—The delivering road shall pay cost of transfer or rearrangement—

(a) When transfer is due to defective equipment that is not safe to run according to Section III.—Mechanical (M. C. B.) Rules, except where the repairs can be made under load as per Section III.—Mechanical (M. C. B.) Rule 2.

(b) When transfer or rearrangement of load is due to contents being improperly loaded or overloaded, according to Section III.—Mechanical (M. C. B.) Rules, or the Interstate Commerce Commission Regulations for the Transportation of Explosives and Other Dangerous Articles by Freight and by Express, or when dimensions of the lading of open cars are in excess of the published clearances of any of the roads covered by the routing.

(c) When transfer is due to delivering line not desiring its equipment to go beyond junction points.

(d) When cars cannot pass the approved clearances of the American Railroad Association.

Second—The receiving road shall pay cost of transfer or rearrangement—

(e) When cars cannot pass clearances (except as provided in Paragraph (d)) or when cars and lading exceed load limit or cannot be moved through on account of any other disability of receiving line.

NOTE.—The word "cars" covers both closed and open cars, but not lading on open cars. The words "load limit" refer to the limits placed on bridges, tracks, etc., and not to car capacity.

(f) When receiving road desires transfer to save cost of mileage or per diem.

15. Private freight cars must be marked with the full name of the owner and proper reporting symbol, or initials and with the number of the car. Mileage settlements must be made with the owner as indicated by the marks on the car, and in accordance with the provisions of published tariffs.

16. Empty cars containing refuse must not be offered in interchange.

Embargo Regulations

The following circular was issued on February 28, by the Transportation Section of the American Railroad Association.

Rule 16, Paragraph B, of the Code of Per Diem Rules, effective March 1, 1920, provides: "Embargoes must be issued by the embargoing road in accordance with the provisions of the Embargo Regulations as approved by the American Railroad Association." In accordance therewith the following embargo regulations have been prepared and duly approved to become effective March 1, 1920:

The embargo is a measure intended to temporarily stop acceptance of freight from shippers at points of origin, in order to avoid congestion.

Embargoes should be placed against consignees who fail to unload or otherwise dispose of freight promptly upon arrival, thereby causing an accumulation, or when an accumulation appears imminent.

Embargoes must not be placed at request of consignees.

Embargoes are not intended to restrict the movement of cars already loaded or in transit except in emergencies, such as strikes, washouts, or similar occurrences, and in such cases they must plainly state that cars in transit will not be accepted.

For the purpose of uniformity and to expedite the transmission of embargoes, the railroads of the United States and Canada will be divided into districts. Each railroad will be assigned to a district by the Commission on Car Service. Each district will be under the jurisdiction of a railroad representative who will be designated by the Commission on Car Service. Interchange of embargoes between railroads will be handled in accordance with instructions issued by the Commission on Car Service. In dealing with embargoes a railroad will be within the jurisdiction of but one district.

A railroad laying an embargo will notify its own agents and shall be responsible for issuing it to the designated representative of each district giving all necessary particulars specifying what, if any, exceptions are to be made. The representative of each district receiving an embargo shall be charged with the duty of transmitting it to all roads assigned to his district on which the embargoed freight may originate.

The form of the embargo must not be changed in transmission. An embargo when transmitted to the district representative, then becomes the embargo of all roads in his district.

NOTE: These regulations do not cancel or modify existing embargoes.

Pursuant to these regulations, the Commission on Car Service has issued the necessary detailed instructions to make this plan operative.

Troop Movement Bureau to Be Continued

The executive committee, of the association with the concurrence of the advisory members, has also arranged for the continuation, for a period of 60 days, of the Troop Movement Section Railroad Administration, which was originally created by the association in 1917.

The action of the committee provided for the discontinuance on March 1 of all departmental general agents, and their forces, but it is proposed to retain a small working force, in charge of C. F. Stewart, who has been manager of the section, in Washington, consisting of one statistical and record clerk, one stenographer and clerk and one mailing, mimeograph and file clerk.

A reduction has been made in the expenses of the section at the rate of $168,000 per annum.

It is understood that the routing representatives of the western, eastern and southern lines now assigned to the Troop Movement Section in Washington will be taken over by the respective passenger associations in the territories named and if maintained at Washington they will be paid by and work under the jurisdiction of the passenger associations in conjunction with the manager of the Troop Movement Bureau.

The executive committee is of the opinion that the continuation of the proposed arrangement for 60 days will enable full consideration of the matter with the War Department and a definite determination to be reached as to the future of the organization after March 1. The present activities of the bureau consist of co-operating with the War Department in all troop movements of parties of 25 or more, and the representatives of the various passenger associations now assigned to the Troop Movement Section are there for the purpose of handling division of business between the various lines. The plan which was made by the military traffic committee of the passenger association with the War Department, prior to government control, provided for an equitable division of the military traffic on a basis of a five per cent reduction from the established tariff rate. This plan handled in conjunction with the organization established by the association for handling operating features of the arrangement has been a desirable one from the standpoint of both the War Department and the railroads and should not, in the opinion of the executive committee, be dispensed with until it has had their complete and careful consideration, and the 60-day period after March 1 should be sufficient to reach a definite determination as to the future of the bureau.

Expressions of Opinion from Railway Officers

THE DAILY NEWSPAPERS of Chicago, New York and other cities have printed comments of a large number of railway officers on the return of the roads to their owners. Extracts from some of these comments follow:

Roberts Walker, President, Chicago & Alton

The new railroad law will assure temporary financial serenity, but not buoyant credit. Credit has a chance of being somewhat improved, should borrowing rates fall. But, taking the roads as a whole, they must produce results, pending further legislation and bettered conditions, with their plants as they stand, with small prospect of obtaining funds for the larger sorts of improvement (double track, grade reduction, enlarged terminals, etc.) for which there is already crying need. As many a manager has said to many a superintendent in the past, "We must do the best we can with what we've got."

Herein are both a threat and a challenge. If private operation be unsatisfactory, the threat of retaking by the government, this time for good and all, will hang overhead. The challenge is for the ablest railroad minds and courageous financiers, under adverse conditions, to render such good service that government ownership talk will not be tolerated.

Carriers must function so well that the public will swear by them, not at them. Results, not excuses, are what the public will rightfully demand. American individual initiative must prove its prowess—or forever hold its peace.

L. F. Loree, President, Delaware & Hudson

I think the railroad men of the country have their work cut out for them, but the return of the roads was the only thing that would have saved the situation. Officials of the Delaware & Hudson are very optimistic over the outlook, and we expect a great improvement in service. This, however, will require time, and the public must have patience.

Under federal control the roads were more or less manhandled and the return did not come a bit too soon. The properties were demoralized, and it will take work to put them in shape. The question of passenger rates is a question of the future, and no one can say just what will happen at this time.

I do not consider labor a serious question. We feel confi-

dent that the differences between the employees and employers can be settled satisfactorily.

Hale Holden, President,
Chicago, Burlington & Quincy

The railroad did their little bit—yes, they did a big little bit during the war. It was done at a great sacrifice to the roads. It will take years to bring about a general gool fellowship between patron and owner.

Marvin Hughitt, Chairman of the Board,
Chicago & North Western

The return of the railroads to their private owners is a good thing for everybody concerned. It will take millions to rehabilitate the properties. Transportation doubles values and extensions that were planned years ago with other improvements that have lain dormant because of the war must be started at once. But it takes money to do these things.

E. E. Loomis, President, Lehigh Valley

There is good reason, in my judgment, for optimism regarding the future of the railroads under the Cummins-Esch bill as reported by the conferees. It is constructive legislation, and I believe the Interstate Commerce Commission will handle the problem now put up to it in a big way. I think the commission will sense the country-wide demand that our transportation lines be placed on a solid foundation of credit which will enable them to grow and expand and at the same time meet the service demands of the public.

A. H. Smith, President, New York Central

After a war that has stressed the entire world, the American railroads will come back to their owners weakened by the vicissitudes through which they have passed.

There is a big task ahead. I believe that the lessons of the last 26 months will bear fruit in the constructive application of laws affecting the railroads and in the amendment of any statutes which are found still to be defective.

The greatest difficult that confronts us at the moment is the lack of equipment. Without sufficient equipment the railroads cannot properly function; and the farmer, the merchant, the manufacturer and the citizen will be adversely affected until this weakness is remedied. Poor goods are costly at any price, and poor railroad service, or the lack of equipment to meet the peak requirements of the country, is most expensive.

What are required is equipment and facilities to supply the maximum requirements of the people and recognition by those who use or regulate the railroads that good transportation service is necessary to the prosperity and well-being of the country.

F. D. Underwood, President, Erie

Portraying the plight of the railroads is as redundant as calling gold yellow. War conditions were the last shot given them, under which their good will was vaporized, their staffs demobilized, their traffic diverted and their maintenance deferred.

To give the public acceptable service, and in the meanwhile evolve plans to finance and execute the necessary procedure, will require constant and intelligent effort. The public will need to adopt the axiom that transportation must be paid for in rates commensurate with cost.

A FIRE at Griffin, Ga., on February 23, doing damage to the amount of $125,000, was started by gasoline which was released on the opening of a tank car in which pressure had accumulated.

Grand Trunk Agreement

LAST WEEK in London the stockholders of the Grand Trunk approved an agreement by which the control of the Grand Trunk and its subsidiary companies is to pass from the present stockholders to the government of Canada.

The agreement in substance is as follows:

Holders of the present guaranteed stock of the Grand Trunk of £12,500,000 ($62,500,000) are to turn over to the government their stock and are to receive a guarantee of four per cent annually on the par value of this stock—in other words, the same income which they now receive; but this income to be a liability of the Canadian government instead of the Grand Trunk Railway Company.

Holders of the £3,420,000 ($17,100,000) first preference five per cent stock and of the £2,530,000 ($12,650,000) second preference five per cent stock; holders of the £7,168,055 ($35,840,275) third preference four per cent stock, and of the £23,955,437 ($119,777,185) ordinary or common stock are to receive new guaranteed stock to an amount to be determined by a board of arbitration. This new stock will bear four per cent interest and have no voting power. Holders of the £4,270,375 ($21,351,875) five per cent Grand Trunk debenture stocks, £2,723,080 ($13,615,400) five per cent Great Western debenture stocks, £24,624,455 ($123,122,275) four per cent Grand Trunk debenture stocks, and £308,215 ($1,541,075) four per cent Northern debenture stocks are to receive a guarantee of their present rate of interest and to surrender all voting rights. The value of the preference and the common stocks is to be fixed by a board of three arbitrators, one to be appointed by the government, one by the Grand Trunk and the third to be Sir Walter Cassels, judge of the Exchequer Court of Canada, who is to be chairman of the board. Should Sir Walter Cassels be unable to serve, a third arbitrator is to be agreed upon, who shall be a judge of the Exchequer Court or of the Supreme Court of Canada.

During the interval between the ratification of the agreement and the deposit of preference and common stocks with the government, a committee of management is to manage the affairs of the Grand Trunk "to insure the operation of the Grand Trunk system (insofar as it is possible to do so) in harmony with the Canadian National Railways, the two systems being treated in the public interest, as nearly as possible, as one system." After the preference and common stocks have been deposited with the government, this committee of management is to be discharged. The committee is to consist of five persons, two to be appointed by the Grand Trunk, two by the government and the fifth to be named by the four so appointed.

The limit of the award of value to the common and preference stocks is to be £64,167,667 ($320,838,355) [comparing with a par value of these stocks outstanding of £185,367,460 ($926,837,300)].

The board of directors of the Grand Trunk are to resign and nominees of the government are to be appointed in their places. The pension fund is to be continued and all liabilities thereunder are to be assumed by the government, and all liabilities in regard to the Grand Trunk Pacific shall be taken into consideration by the arbitrators in making a valuation of the common and preference stocks. The Grand Trunk and the government are each to pay the arbitrators selected by them, and the third arbitrator and other common expenses are to be shared equally. The arbitrators are to make their award within nine months from the time of their appointment, and if the award is unanimous it shall be final, but if not unanimous, appeal may be taken by either party on any question of law to the Supreme Court of Canada or to the judicial committee of the Privy Council.

Why Do Engineer Graduates Shun Railway Jobs?

University Professors Say That Other Employment Pays Better and Offers Greater Opportunities

WHAT ARE THE OPPORTUNITIES for the engineer in railway service? One answer to this question will be found in a review of the personal news appearing in current issues of the *Railway Age*. An entirely different one will be obtained through an intimate contact with the undergraduates of the technical schools. On the one hand, we find that definite recognition is being extended to the engineer by his selection for important positions in operating, executive and advisory capacities. On the other hand, we find that railway employment in the minor engineering positions is very much in disfavor. It has been said that railroads are recruiting their men from the poorest of the engineering graduates, in other words, from those who could not secure more attractive employment elsewhere. The contradiction implied by these statements is purely superficial; basicly there is no contradiction at all. The engineers who are now receiving well merited recognition of their value to the roads are men who entered the service some 20 years ago when economic relationships were such that the railways attracted the best of the technical graduates, when the heyday of rapid railway extension cast a glamour about railway employment that compensated in a large measure for low pay.

Railway employment for the young engineer today is in an entirely different status. Whatever the reason, it is a cold fact that the railway position is not as near as attractive to the university graduate as it used to be and the technical schools are not giving the same amount of attention to the courses of study in railway engineering subjects as they did formerly. With a large amount of improvement work in prospect, and with a large competing field for the employment of engineers in highway construction and other lines, the railroads are confronted with a very serious problem.

Obviously there are some basic reasons for this lack of interest in railway work and if the roads are to blame they should make haste to correct whatever objectionable conditions are at fault. As the officers of technical schools are in closer touch with the thoughts, ambitions, and prejudices (if we may call them such), of the embryo engineer, it is believed that the following discussions by professors of engineering will throw considerable light on the present shortcomings of railway employment. While these are presented in critical language the criticisms are constructive and, in nearly all cases, based on personal experience.

The Engineer's Importance Is Discounted

By M. E. Cooley

Dean of the College of Engineering and Architecture, University of Michigan, Ann Arbor, Mich.

The railroad's attitude towards its engineering staff appears to be one of indifference. This is not literally true of course, but because the engineer does his work quietly and effectively and apart from constant contact with the general officers, he is comparatively unthought of. Who for instance gives a thought to the engineering staff charged with the responsibility of making travel perfectly safe on "The Twentieth Century" and "The Detroiter"? In no other branch of the engineering profession is a greater degree of technical skill required, nor a greater responsibility.

The engineer is a money spender of course. It is his business to construct and maintain, and both cost money. It is the money he spends which makes earnings possible. He is like the roots of a tree, which no one sees or thinks about when admiring its beautiful top, and out of the bole of which comes the timber so necessary in many ways. Who thinks of the engineering skill required to construct some of our lighthouses? Yet they make safe the transport of human beings and untold wealth in ships and merchandise. And who thinks of the skill required in the construction of our great tunnels which have shortened the world's distances? Has any man done more to advance the material side of our civilization? Has any man who has done truly great things been less recognized and less recompensed? Well may we inquire *Why?*

Lack of Attention to Personnel

By Wm. G. Raymond

Dean of the College of Applied Science, State University of Iowa, Iowa City, Iowa

Why do so few college graduates in engineering go into railroad work? Because there has been so little to look forward to as compared with future prospects in other branches of the profession.

A few men, Mr. Rea, Mr. Story, Mr. Baldwin, Mr. Wilgus, and some others are evidence of the fact that there is not wanting some worth-while opportunity for the very few master minds among engineers in railroad service; but the progress is slow, and for the much larger group of men of more than average ability there is little opportunity for just reasonably early advancement. As to maintenance of way work!! —there is little of the romance of location in these days. Can anyone with a mind capable of dealing with question in the large be satisfied with its mass of petty details and ready to wear formulas? Other industrial enterprises have seemed to appreciate better than the railroads, the value of trained minds in subordinate positions and have made it worth while for college men to seek employment with them, paying these men well while teaching them particular lines of business, and holding out encouragement for the future to those who have ability and who develop aptitude for some line of activity in the business.

No effort is made by the railroads to train young men for general railroad service; no effort is made to find out what they are good for and to place them in the lines for which they are to be fitted. If they prove to be ill adapted to the particular job assigned when they enter employment, they are dropped. But most of those who quit, if my experience with graduates is a fair indication, quit of their own accord because they see ahead of them much older men of mediocre or even apparently excellent ability, of long years' experience, working along at fussy details on small salaries, with little expectation of a better future, with little disposition to advance the men under them or to report excellent work to superior officers. They find a sad lack of *esprit de corps* —it is every fellow for himself.

This is a general indictment—there are exceptions.

The young college graduate in engineering is a person whose training should have taught him to reason from cause to effect, to think—and not to jump at conclusions from insufficient or inconclusive data. He is a very variable product, to be sure, but if of equal ability with others in other directions he is the man who should make the best operating officer. He is the man who should be under observation; who should be trained in the business of railroading. I suspect

that a fundamental difficulty is that this fact has not been realized by responsible management. Until it is realized and acted upon will it be strange that college professors, even those whose specialty is railroad engineering, advise students to look elsewhere than to the railroads for employment?

Remuneration Not Commensurate With Services

By Fred Asa Barnes,
Professor Railroad Engineering, Cornell University, Ithaca, N. Y.

Some years ago, one of my colleagues introduced a lecture on his field of engineering with the statement that it was remarkable for the opportunities it offered for useful and altruistic service to one's fellow men but, less injurious inferences might be drawn from the well known experiences of teachers and other "altruistic" workers, added that the financial rewards were moreover quite satisfactory. A most cursory review of the benefits to humanity brought about by and daily dependent upon our railways will convince anyone that the first statement applies rigorously to the field of railway engineering but a decent respect for truth would prevent one from adding that the rewards are commensurate with the importance of the service.

And this is why many young men have for years gone into the railroad field only because they found it impossible to secure work in other lines and why, now that work in other fields is available, both young and old are leaving the railways. During the past week alone, I have learned of two of our graduates with some years of successful railroad experience, who are quitting the field.

In my opinion, the blame for this situation rests squarely upon the roads, since they have, with astonishing lack of foresight, persisted in the policy of paying engineers less than the service was worth. Loss of many of their best men and the shortage of engineers are the natural results of that policy just as excessively representative legislation naturally followed similar shortsightedness on the part of railway owners and managers of two or three decades ago.

There is no use in crying over spilt milk, however, and the crying need now is to find a solution of the problem which will give the best results from the millions which must be expended in the next few years if our railroads are to continue to serve the transportation needs of the country at all adequately, for there is danger that the control of much of this outlay will be in competent hands.

The primary need is, of course, for legislation which will thoroughly rehabilitate railroad credit, for the roads must successfully compete for capital with other projects before they can compete for materials, labor and engineering services to carry out the extensive improvements now needed. The competition for all these things will be keen and the fact that the successful rehabilitation of the railroads is essential to the economical execution of much of the rest of the program of construction is not likely to lead to action giving them the first call on anything.

The competition for engineers will be particularly keen because many have gone into other lines and competent ones can not be trained in a day, or a year, for that matter. I believe the railways should immediately adopt a salary scale somewhat higher than those in other fields and should permanently follow a policy of paying a larger percentage of their total outlay for maintenance and construction to the men who supervise its expenditure.

It is well enough to talk of altruism but to apply it to one class of employees alone is as dangerous as to apply the policy of disarmament to one nation alone. "Might makes right" is pretty much the policy of the organized employees and justice requires that the roads look after the interests of the unorganized ones and see that they get a square deal.

Knowing that "railroading" makes a strong appeal to the imagination of many young engineers, I feel sure that reasonable compensation as compared with other fields will attract able men to railway work and increases commensurate with the increased value of their services as they acquire experience will hold them in it. Furthermore, I believe this policy will result in placing the expenditure of funds in more and more competent hands so that it will really prove the most economical one for the roads to pursue.

In my opinion, there is no real lack of interest in railroad work and I, for one, shall be glad if the time comes when I am not compelled to discourage entrance into that field by owning up that there is "nothing in it" financially. The situation is critical, but the first move is up to the roads. As soon as that move is made, I believe the colleges will co-operate to the best of their ability.

It Is Not Solely a Matter of Wages

By L. F. Van Hagen,
Associate Professor of Railway Engineering, University of Wisconsin, Madison, Wis.

Railway engineering is not popular among Wisconsin students,—practically none of them specializes along railway lines or plans to make it his life work. As a faculty we make no effort to influence students in this matter, because our experience has taught us that, although we can persuade men to try railroading, we cannot make them stick to it. The conditions they meet drive them out of that line of work in short order. Last spring one of the best men we trained at Wisconsin took a railroad job. He had not specialized along railway lines, but, when the time came to select a job, the railway offer seemed to be one of the best. I talked matters over with him carefully, told him frankly that he would be tempted to quit, but explained that transportation is a big business and offers many opportunities for the man who makes good. He stayed with the job about a month. It may be argued that the trouble was with the man and not with the job; but I know the man and I do not think that is the explanation. Besides, his case is but one of several that I could mention; we can place men with the railways, but the railways cannot hold them after they get them.

The causes underlying this aversion to railroading are complicated; and I hesitate to attempt a discussion of them within the limits set for this paper. They fall into two general classes,—those without and those within the power of railway officers to control and modify. In the first class we have, for example, the fact that railroading, which at one time absorbed the bulk of the civil engineers of the country, now shares the field with, and must meet the competition of many other lines of work. Another item of major importance is the antagonistic attitude of public, press, and government toward, and the uncertainties which that attitude has created. No young man wants to go into a business that is not making money, or one in which he will be unduly hampered by outside agencies. We cannot discuss the first class here for lack of space. But we are interested in the second class,—those things over which railway men have control. What can be done to make the railway business attractive to intelligent young men.

As a comprehensive answer to the question just stated, I would say, *"Build up an esprit de corps."* If those railway officers who are responsible for creating and maintaining the organization, will agree that *esprit de corps* is essential to any organization and will then search out ways to develop the spirit of loyalty and service, the deed will be done. The faults that exist will be discovered and removed. What those faults are is immaterial. In my opinion they all arise from

a failure of railway officers to adopt modern methods of handling men and will disappear when more intelligent methods prevail.

And if any among them holds to the theory that salary is the crux of the whole matter, let him hasten to abandon that theory. A good standard of pay will attract men, but, of itself, it will not hold them. I have talked with enough young men about their future plans to realize that although the size of the pay check is a big factor in choosing the first job, it is not the only one that receives attention. After men have been attracted, the conditions surrounding their employment must be such as to hold them.

Transportation is a big and fascinating business that appeals to young engineers. The railways can have the pick of the engineering schools whenever they want our men badly enough. And when our students begin to show an interest in railway matters and a desire for special instruction, this college, and other colleges as well, will quickly meet the demand.

A Prejudice Not Easily Removed

By Clement C. William,
Professor of Civil Engineering, University of Kansas, Lawrence, Kans.

Owing to the discouraging conditions and prospects that have prevailed in the engineering organizations of our railways, graduates of technical schools are not attracted to this service. These conditions have existed so long, moreover, that, notwithstanding many railways have materially increased their salary scales so that, indeed, of all the requests for graduates as assistants that have come to us within the past six months, the railways are among the highest in wage scale, most students still shun the thought of preparing for railway service. Engineering instructors very generally advise students against selecting railway work, for most of these instructors have served unprofitable apprenticeships in railway service under the niggardly conditions that have existed heretofore. These circumstances have become an established tradition, in the minds of the students and several years of optimum conditions will be required to remove this prejudice. By their shortsighted policy, the railways have cut off their supply of technically trained assistants from whom they might naturally expect to select their engineers for higher positions as well as a certain quota of operating officers.

About six years ago, the writer addressed a circular letter of inquiry to the chief engineers and the superintendents of motive power of most of the larger railways of the country asking about the arrangements under which technical graduates were taken into the railway service and about the opportunities for advancement. Some of the motive power departments had definite schemes of apprenticeships, but none of the engineering departments had in operation any definite plan whatever for taking young graduates into their employ. The chief engineer of one extensive system stated that in a few cases, "as occasion offered," they employed technical graduates at $1 per month and transportation (!)—a wonderfully roseate prospect for a graduate who had been led to believe that he had received a training which had an economic value.

Three major complaints are lodged against railway service: (1) low pay, (2) long working hours including Sunday and holiday work without extra pay, and (3) small chance of advancement, particularly into administrative and executive offices. Other industries are not subject to these criticisms and even other lines of civil engineering have offered more favorable opportunities. Railways in employing chainmen or rodmen have secured on a competitive equality college graduate, high school graduate, an ignoramus—anyone who could drag a chain, hold a rod, run a planimeter and add quantities. Apparently there has been no thought of the responsibility of providing the assistant engineers, division engineers or superintendents for the future. The result is now a dearth of technical men in railway service and a deep-rooted prejudice against entering it.

Although recognizing these conditions, we at the University of Kansas have not seen fit to remove railway engineering courses from our curriculum nor radically to diminish the amount of time devoted to them. Railway survey methods are typical of all construction line surveys, viz., railway, highway, irrigation, drainage and other canals, etc. Moreover, the more general courses in the economics of railway engineering are applicable in method of attack to highway and other transportation engineering.

While we have not made any marked reduction in the time devoted to railway engineering subjects, we have shifted the emphasis somewhat. It is the writer's opinion that the railway engineering problems of the future are perhaps more complex and more important than any that have arisen in the past, but that they will be largely economic rather than physical, although fundamentally engineering in their scope. For this reason, therefore, it is the writer's opinion that a civil engineering curriculum should devote some attention to the economics of railway improvement, even at the expense of training in curves and structures. It is our opinion that the young engineer in railway work who sees nothing in his vocation but the alining curves, setting of grade stakes and the calculation of earthwork and other estimates will no more find it a satisfactory field of endeavor than will the structural engineer find his field whose vision is limited to the calculating of stresses and the proportioning of parts.

That an industry of the magnitude of the railways can be successfully and efficiently carried on without technically trained men is incredible. If wages are increased and the hours of working equitably adjusted, youthful technical graduates will again seek employment there, and if provision is made for fair advancement, they will remain in the service. If, however, these three conditions are not made satisfactory, capable young men will not remain in the engineering departments of the railways because other industries have come to an appreciation of the value of the technically trained man and will offer more attractive opportunities. In that case, we may expect to see the more intricate and important railway engineering work done by consulting engineers of vision and capacity, and the regular engineering staffs, inevitably under these circumstances composed of mediocre men, occupied in alining curves, setting construction stakes, making estimates and collecting information on which more expert men will base their designs.

Railroads Have Not Co-operated with the Schools in Selecting Men

By Henry E. Riggs,
Professor of Civil Engineering, University of Michigan, Ann Arbor, Mich.

It is an undeniable fact that the compensation in the railroad service is much less than in other fields of work. There are hundreds of good engineers who have spent from 10 to 25 or more years in faithful, loyal and intelligent service of railroads in positions of large responsibility whose compensation ranges from $2,500 to $3,500 or $4,000 per year at the present time. There are relatively few who are receiving $5,000 or more.

Contrast this with the fact that many graduates, with from 3 or 4 to 10 years' experience, are in positions with industrial concerns and with builders which pay from $3,600 to $6,000 or more. Since the Christmas holidays one of our

alumni with five years' experience left a railroad position at $130 per month to take on at $300, while another, a mechanical engineer with seven years' experience, secured a position with a large rubber manufacturing company, in strictly engineering work, at $4,800 per year. This certainly justified leaving railroad service at $175 per month.

Very much of the expressed dissatisfaction with engineering as a profession comes from railroad men. Twenty-five years ago my old general manager said to me that the engineering department of a railroad is the spending department, and the management has no measure of value as in the case of the traffic department, where a man's worth is measured by the business he gets. This view, which is unfortunately shared by too many people, led me to get out of railroad service. While I have never found any work which was more attractive or enjoyable than railroad work, I have never been so poorly paid as I was when doing the work I liked best of all. I have had the satisfaction of serving my old company at rates many times as much as I received as chief engineer. The compensation paid to consulting engineers by railroads, the much higher rates paid by industrial and manufacturing corporations for similar service in the same communities, and the much greater ultimate earnings of men in these other lines of work, inevitably leads to dissatisfaction and complaint from many men in service whose ability and character is of the highest, and this complaint has a marked effect on college men.

Another fact which we men who are in the position of advisors to young men are bound to take cognizance of is that railway service gives but little opportunity for a man to grow and develop outside of the line of his duties. His friendships are largely limited to the circle of employees of his own road. His work demands so much of his time that he has very little left for recreation or for taking an active part in the duties of citizenship. How many railroad engineers are members of country clubs? of leading clubs in the cities in which they reside? How many are active in chambers of commerce or in civic affairs? Very few, indeed, as compared with those in other lines of work. I have attempted to gather no statistics, but I will venture the assertion that the percentage of railroad engineers who have formed such connections in our cities is very small as compared with the percentage of engineers in other lines of work.

Since December 15, 1919, just two months, the civil engineering department of the University of Michigan has had openings for more than 150 young men, or over ten times as many as completed their work this month. Most of these stated salaries as from $125 to $200 per month, and in case of men with two or three years' experience some offered as much as $250. Two railroad calls offered $90 to $125. Of about one hundred members of the senor class, only two are taking the railroad design and advanced courses, and both of these men are Chinese! No one regrets more than the writer the fact that our college men are not attracted to railway service in the same proportion that they were in the eighties and earlier. Yet they cannot be blamed, as the service does not offer the rewards that it did then.

It is not possible always to pick the winners at the time of graduation, but certainly the universities with carefully kept records covering four years of a young man's life ought to be in a position to furnish information of great value to a prospective employer in the selection of men. The railroads, less than any other industry, avail themselves of this information. When, on the other hand, steel companies, manufacturers, contractors, consulting engineers and men in all lines of activities are seeking men for certain work, or with certain qualifications and lines of experience, and are either asking the university to recommend or are sending their representatives to look over the men, is it any wonder that the railroads get the worst of it?

The railroads should be able to co-operate with the universities exactly as the bridge companies have. If the rail roads will give preference in employment to high-class men who have spent two or three years in preparation for railroad service, and not place them on exactly the same plane as high school graduates, they can get these men. If the roads can get into a position where they can pay adequate salaries, not only to the younger but the older men, and give some reasonable prospect that railway service does not bar a man from taking a real place in his community, they can draw from the best of the college men, but until then nothing can be done to change the present attitude of the student body.

When the writer graduated from college in the early eighties, by far the largest percentage of engineering graduates were entering the railway service, and a large number of the most prominent chief engineers of the country were graduates of the different institutions and actively interesting themselves in securing college men. At that time the greatest era of railroad building that the country has ever seen was at its height. Today the tremendous expansion of manufacturing, the development of fireproofing and building of numerous tremendous office buildings, hotels and mercantile buildings, the present development of good roads and numerous other activities create a demand that is so much greater than the railroad demand and offer opportunities that are so much more alluring than any railway positions that the young graduate is inevitably drawn to some other field.

This condition can only be remedied by better compensation for men in all ranks of railway service and better prospects of advancement than are now apparent. I think that the colleges and universities cannot be accused of lack of interest in transportation. It is, next to agriculture, our largest industry, and above all others it is most important as our prosperity necessarily depends upon the transportation systems of the country. The officers of the railroads will find no lack of co-operation from the universities whenever the universities can be assured of a thorough desire for that co-operation.

The Pay Is Insufficient

By Winter L. Wilson,
Professor of Civil Engineering, Lehigh University, South Bethlehem, Pa.

The railroads do not pay sufficient money to justify the graduate engineer in taking up this line of work. The writer's practical experience has been principally in railway engineering and later in teaching the subject — more than thirty years in all. On account of a great liking for railway work, he has been noting the decreasing proportion of the graduates that take up this work. At least 10 years ago, when railway engineers asked why they did not get the men they wanted from the graduating class, the answer was that they did not offer enough money to compete with other offers the graduates received.

Our university catalog states that the purpose of the civil engineering course "is to give a broad education in those general and scientific subjects which form the foundation of all branches of technology and special training in those subjects comprised under the term of civil engineering." No undue emphasis is laid on any one of the subjects, and the same amount of care and effort is spent in improving and keeping each of them up to date. Therefore, the same amount of attention is given to the preparation of students as railway engineers as formerly.

The greater proportion of our civil engineering students work during the summer vacations, which helps them to form their own ideas of the line of work they wish to follow upon graduation, and very few ask advice. Since railway engineering is a part of the civil engineering course and half

of our instructing force have followed railway engineering before taking up teaching, it is a fair inference that neither the university nor the faculty try to discourage the boys from going into railway work.

Civil engineering students, practically to a man, like the surveying and open air work, but the trouble is that the pay of a graduate entering railway engineering is disproportionately small. A few days ago a track foreman, when asked about his laborers, said, "No dama good, don't knowa the diff betweena de pick and de shob; New York bum." The track laborer is paid 40 cents per hour for eight hours and time and half time for overtime. If he works full time he receives over $80 per month without overtime. A student must spend a large sum of money each year for necessary college expenses and study four years to get his degree, and recently an offer of $90 per month was made for this year's graduates to go into railway engineering.

Practically every engineer who has been in railway work has pleasant recollections of the work itself, regardless of hardships incident thereto. The writer's experience varied from maintenance of way and construction in this country to the inter-continental railway survey through Ecuador and Peru, and he does not regret a day of it, and it hurts to see the young engineers pass it up. When a student about to graduate asks about railway engineering as a life work, all questions can be answered satisfactorily until he asks about the pay. Many students have borrowed money in order to complete their college course, and there is a legitimate reason for seeking pay rather than pleasant work.

The reason why our graduates do not go into railway engineering is because they can get more pay in other lines of civil engineering. This is the question for the railroads to settle and is one item in connection with the unscrambling of the uncooked omelet that has been handed over to them.

Some Encouragement in the Present Situation

By W. K. Hatt,
Professor of Civil Engineering, Purdue University, Lafayette, Ind.

I commented upon this situation in your columns some two or three years ago and there has been no change of sentiment on the part of our students toward railroad work since that time. We have diminished the number of courses in railroad engineering in our curriculum in civil engineering by throwing the railroad field work in the summer camp, and we have diminished also the time given to such work as computation on frogs and switches and yard layouts. This has been necessary because of the insistence of the public upon a broader course of training for engineers, and also to give some consideration to the technology of highway construction and electrical engineering.

I have been impressed with a marked change of attitude on the part of our students toward strictly engineering activities, such as service in the drafting rooms of bridge companies and the maintenance of way organizations of the railroads. Their thoughts are reaching out to sales engineering, so-called, and foreign service and business management. I regret this because it may lead a student to attempt to dodge the thought-developing courses of mathematics and mechanics.

We constantly urge upon the students that there is no better and broader training for general engineering service than one or two years experience on the maintenance of way organizations of our railroads. A recent study of the returns from our alumni have shown us also that, under the government scale of pay, the engineers are doing fairly well in respect to compensation. In my opinion if the operation of the railroads becomes stabilized and the present scale of pay is not diminished so that a man may look ahead to a permanent position with enough pay to support his family, the great attractiveness of service in a large organization like a railway will bring the boys back into line.

It appears to me that the railroad officers must not take a too exalted position with reference to this matter,. If they wish to secure the best brains of our graduating classes they will have to compete for them with other organizations that know the value of a highly developed mental organization. Personally I regret to see so many of these first class men being attracted to the industries, which sell their products to the railroads, rather than to the professional organization of railway engineers.

As I said some two or three years ago, it is up to the railroads to attract the leading men among the graduating classes. It has appeared to me in the past that some of our chief engineers of the railway systems were not imbued with the spirit of sympathy and helpfulness toward their younger colleagues, and that the true interests of the railway organizations would be promoted by a higher sense of responsibility for the interests of the profession.

Final Accounting Instructions of the Railroad Administration

DIRECTOR GENERAL HINES issued on February 24 General Orders No. 66 and 67, the first named prescribing the form and procedure for dealing with the accounts of the Railroad Administration after the return of the roads to private operation on March 1, and the latter dealing with similar matters in relation to water carriers.

These orders contain technical detailed instructions with regard to accounting procedure. Under their provisions creditors of the Railroad Administration for supplies furnished to the railroads during federal control for overcharge claims and loss and damage claims are expected to render their accounts against the railroad companies in the same manner (and against the same line) as they have heretofore filed them with the federally operated railroads. The disposition of these matters by the railroad corporations acting for the director general will be closely supervised by the central administration at Washington, as the liquidation of these matters progresses, but the arrangement will facilitate the handling of the accounts of the Railroad Administration's creditors and will not entail upon them the establishment of new relations or new procedure to secure the settlement of their accounts. This will be true as to the great bulk of items that are unsettled at the end of federal control, though it was stated that, of course, exceptional matters may require special treatment. General Order No. 68 was also issued including instructions regarding the disposition of federal cash and securities on hand.

General Order No. 66 includes the following: To provide accounting procedure incident to the termination of federal control and to re-establish as of the end of federal control the instructions relative to allocation of revenues and expenses as between the United States Railroad Administration and the corporations, applied as of the beginning of federal control, it is ordered that the following regulations be observed in accounting for transactions relating to the federal control of transportation systems:

The separate books of account upon which are recorded transactions incident to federal control shall be continued in use after February 29, 1920, for the purpose of recording federal control transactions after the period of federal operation ceases and until further ordered. Transactions arising out of operations subsequent to February 29 shall not be entered on the federal books, but on the corporate books; likewise all transactions not previously accounted for either on the federal or corporate books relating to the period prior

to federal control should be entered on the corporate books and shall be omitted from the federal books.

(*a*) The federal treasurer's cash book shall be continued in use until further ordered, and all federal control cash transactions arising after the end of federal control shall be entered in such cash book.

(*b*) The total cash, if any, transferred to the corporation from the cash in the hands of the federal treasurer in accordance with General Order No. 68 shall be charged on the federal books to a deferred asset account styled "(Name of corporation)—federal cash, February 29, 1920." The amount of such cash transferred should be entered in the corporate cash book, and on the corporate general books should be debited to the appropriate account or accounts and credited to a deferred liability styled "U. S. Government—Federal cash, February 29, 1920."

(*c*) The balance representing cash in transit applicable to accounts for the period prior to March 1, 1920, shall be charged on such books to a current asset account styled "(Name of corporation)—Federal cash in transit, February 29, 1920." On the corporate books corresponding entry should be made, debiting the appropriate account or accounts and crediting a current liability account styled "U. S. Government—Federal cash in transit, February 29, 1920."

(*d*) When cash is realized from assets of the director general the amount thereof shall be credited through the federal cash book to the proper accounts. This refers to assets recorded as of February 29, 1920, and those subsequently recorded on the federal books.

(*e*) All authorized payments of liabilities of the director general made out of federal cash shall be charged on the federal cash book to the proper accounts.

(*f*) On and after March 1, 1920, all remittances (except those deposited in the federal cash and accounted for as applicable to the agents' and conductors' accounts for February, 1920) received from agents and conductors shall, in the first instance be entered in the corporate cash book and credited to the appropriate accounts on the corporate general books. To the extent that items standing in the account "Agents' and conductors' balances" as of February 29, 1920, are included in such remittances, the amount shall be reported to the accounting department and the aggregate paid over daily into the federal cash. Such payments should be charged on the corporate books to the account "U. S. Government—Agents' and conductors' balances, federal, February 29, 1920." On the federal books the payments shall be charged to "Cash" and credited to the account "(Name of corporation)—Agents' and conductors' balances, federal, February 29, 1920." This method of daily settlements shall apply to agents' and conductors' unremitted cash on hand at midnight February 29, 1920, and to all collections made by agents and conductors during the month of March, 1920, applicable to balances of February 29, 1920.

(*a*) The total of the accounts representing amounts carried as due from agents and conductors appearing on the federal books as of February 29 shall be transferred to the corporate books and debited on the federal books to an account styled "(Name of corporation)—Agents' and conductors' balances, Federal, February 29, 1920." On the corporate books the amount of such balances should be debited to the appropriate account or accounts and credited to a deferred liability account styled "U. S. Government—Agents' and conductors' balances, Federal, February 29, 1920."

(*a*) The total of the account "Material and supplies" appearing on the federal books as of February 29, 1920, shall be transferred to the corporate books and debited to a deferred asset account on the federal books styled "(Name of corporation)—Federal material and supplies, February 29, 1920." On the corporate books the amount of such balance should be charged to the appropriate account and credited to a deferred liability account styled "U. S. Government—Federal material and supplies, February 29, 1920."

(*b*) All material and supplies received prior to March 1, 1920, shall be accounted for in the federal books. All invoices for such material and supplies referred to in the previous sentence as are vouchered after the close of the accounts for the month of February, 1920, shall be covered by federal form of vouchers and the cost of all such material and supplies shall be added to the account "(Name of corporation)—Federal material and supplies, February 29, 1920." On the corporate books the amount of such vouchers should be charged to appropriate account for material and supplies and credited to the account "U. S. Government—Federal material and supplies, February 29, 1920."

(*a*) Railway operating revenues and taxes shall be allocated to the period of federal and corporate operations in accordance with the provisions of the standard agreement.

(*b*) Railway operating expenses, reparation and other claims, hire of equipment and joint facility rents, and any other accounts (except as provided in par. (*a*)), which constitute the basis of the standard return, shall be allocated with reference to the time when incurred as between the period of federal control and the period prior and subsequent thereto.

(*a*) There shall be entered currently after February 29, 1920, upon the federal books referred to in section 1 hereof, a record of all transactions arising out of federal control of railroads.

(*b*) Bills for accounts collectible and vouchers for accounts payable covering all transactions arising out of federal operations shall be prepared, respectively, on United States Railroad Administration bill and voucher forms, recorded in the appropriate federal bill and voucher registers, and charged or credited on the federal books to the appropriate accounts.

January Deficit $64,000,000.

DIRECTOR GENERAL HINES on March 2, authorized the following statement regarding the January earnings: "Although the railroads are no longer under federal operation, the director general has thought it advisable to keep the public fully informed as to the result of the January operations by the government as soon as the figures became available.

"The preliminary reports of the operating results for practically all of the Class I railroads and large terminal companies in federal operation indicate that the net operating income for the month of January, 1920, from the operation of these properties, will be about $64,000,000.

"Included in this amount, however, is approximately $53,000,000, representing an estimate of the back mail pay for 1918 and 1919 accruing to the Railroad Administration in connection with the decision of the Interstate Commerce Commission of the 23rd of December, 1919, on railway mail pay. Deducting this amount from the net operating income of 64,000,000 reported, leaves a net operating income arising from January operations of $11,000,000.

"If the rental for January could be based on the net operating income earned in the average January of the test period the rental would be $55,000,000, and the excess of expenses and rentals over revenues would be $44,000,000, but since the statute requires in effect that the railroad companies shall be paid for each month of federal operation one-twelfth of the annual compensation the rental payable to the railroad companies will be approximately $75,000,000 and therefore the excess of expenses and rentals over revenues will be about $64,000,000. This amount (without diminution for the increase in mail pay), has been included in the excess of expenses over revenues given in the director gen-

eral's report to the President for the 14 months ending February 29, 1920.

"The operations in January were affected by the unusually

	For the month of January			
	1920	1919	1918	1917
Revenue and non-revenue ton-miles per mile of road per day	4,866	4,258	3,878	4,770
Per cent of increase 1920 compared with 1919, 1918 and 1917	.....	14.3%	25.5%	2.0%
Average train load	646.	625.	577.	598.
Per cent of increase 1920 compared with 1919, 1918 and 1917	.....	3.4%	11.9%	8.0%

severe weather during the month and to an important extent by the adverse influences of the coal strike, such as the dislocation of cars and traffic, the high prices and abnormal transportation costs included in the cost of locomotive fuel, and the unsatisfactory quality of much of the fuel that was obtainable.

"Notwithstanding these adverse conditions, an unusually heavy tonnage was handled during the month as compared with previous years and the average train load showed a gratifying increase over January, 1919, 1918, 1917, as indicated by the table.

The total amount of the retroactive mail pay due to the Railroad Administration has been estimated at $73,000,000, but it is understood that a part of it was credited by some of the railroads into their December accounts, while others have not yet included it.

Answer to Labor Leaders on Wage Demands

Bi-Partisan Board to Be Selected for Preliminary Conferences. Labor Unions Accept Plan Under Protest

WASHINGTON, D. C.

AFTER SIGNING the railroad bill on February 28 President Wilson sent to the executives of the 15 railroad organizations a letter replying to their objections to its provisions for the settlement of wage disputes and announcing that the pending wage demands will be handled through the machinery thus created. The President thus disposes of the counter-proposal made to him by the labor leaders in their so-called "tentative acceptance" of his proposals of February 13 in which they promised to submit to their constituencies a plan for the creation of a joint special commission composed of an equal number of representatives of the railroads and of the unions to render a decision in 60 days.

The President's letter continues to place his own interpretations upon the various proposals, rather than the interpretation of the labor leaders and their "suggestion" for the creation of a bi-partisan board is accepted to the extent that it complies with the provision in Section 301 of the bill for the consideration and, if possible, the decision of disputes in conference between representatives of the carriers and employees. This section of the bill makes it the duty of all carriers and their officers, employees and agents "to exert every reasonable effort and adopt every available means to avoid any interruption to the operation of any carrier growing out of any dispute," and provides that if the dispute is not decided by the conference it shall be referred by the parties to the Railroad Labor Board created by the law. This conference between representatives of the two parties provided in the bill, the President says, "appears to be an appropriate substitute" for the committee of experts which he had suggested and for which the railroad executives in their conference with Mr. Hines had already agreed to select representatives.

The President seems to have retained his command of the situation throughout by calmly proceeding along the lines of his original proposal and ignoring the interpretation placed upon it by the labor leaders when they called their meetings, which were attended by about 2,800 delegates, in Washington last week and which resulted only in the adoption of resolutions urging the President to veto the bill.

President Wilson's Letter

The President's letter was as follows:

"Your letter of the 14th instant and the subsequent arguments presented on your behalf with reference to the subject of pending claims for wage increases have had my careful consideration. The passage of the railroad bill by the House of Representatives on the 21st instant and by the Senate on the 23d instant has made it evident that I could not act upon your suggestions until it should be determined whether the bill would become a law or not. It was manifest that if the bill should become a law the negotiation and consideration of the wage matter ought to proceed in harmony therewith.

"The bill having now become a law, the way is open for immediate action on the wage matter in accordance with the terms of the bill. Section 301 of the bill evidently contemplates that the carriers and employees should, as suggested by you, select representatives who will thus constitute a bi-partisan board for the purpose of attempting by conference to agree upon a solution of this wage problem. In accordance with the assurance I gave last August and repeated in substance in my letter of the 13th instant, I shall at once request the carriers and the employees to join in this action. I believe such a step will go far toward clarifying and maturing the subject for final disposition. In fact, the sort of board thus contemplated by section 301 appears to be an appropriate substitute for the committee of experts which I have heretofore suggested, and indeed such a board will be authorized to go further than such a committee could have gone.

"While it is true that the provisions of section 307 of the railroad bill relating to the labor board will probably also come into operation as to this wage matter, nevertheless the bi-partisan board can make a great deal of progress which will materially diminish the time to be consumed by the labor board; and while the bi-partisan board is functioning, the appointment and organization of the labor board can be expedited.

"I cannot share the apprehension of yourselves and your constituents as to the provisions of the law concerning the labor board. I believe those provisions are not only appropriate in the interest of the public, which after all is principally composed of workers and their families, but will be found to be particularly in the interest of railroad employees as a class.

"The argument that the public representatives on the labor board will be prejudiced against labor because drawn from classes of society antagonistic to labor can and ought to be overcome by selecting such public representatives as cannot be charged with any such prejudices. Nor do I anticipate that the public representatives will be against wage increases because they involve rate increases. Not only must public

representatives be selected who can be relied upon to do justice, but the bill itself provides that the labor board shall establish rates and wages and salaries which in the opinion of the board are 'just and reasonable'; and it is further provided that the entire labor board shall be guided by the very important standards which are provided in the law, those standards including the wages paid for similar kinds of work in other industries, the relation between wages and the cost of living, the hazards of the employment, the training and skill required, the degree of responsibility, the character and irregularity of the employment, and the correction of inequalities as the result of previous adjustments. Coupled with the direction to the labor board to take into consideration these important standards is the highly important direction to the commission to prescribe rates sufficient to admit of the payment of the reasonable operating expenses including, of course, fair rates of wages.

"My hopes are that the putting into effect of these provisions with a carefully selected labor board whose public representatives can be relied upon to be fair to labor and to appreciate the point of view of labor that it is not longer to be considered as a mere commodity will mark the beginning of a new era of better understanding between the railroad managements and their employees, and will furnish additional safeguards to the just interests of railroad labor.

"I am sure that every agency which will be involved in the creation of the labor board and in the conduct of negotiations fully appreciates that the wage demands are entitled to the earliest possible consideration and disposition, and therefore I do not anticipate delay in the appointment and organization of the labor board or in the other necessary steps."

President Wilson was urged to veto the railroad bill by the chief executives of the "standard recognized railroad labor organizations," as they call themselves, who were parties to the recent wage negotiations with the director general and the President, who called on Secretary Tumulty on February 26 "by unanimous instruction of the duly authorized representatives of the respective organizations" that had been holding meetings to consider the President's proposals for settlement of the wage question, and presented resolutions setting forth the reasons why "the more than two million railroad employees believe the President should veto the railroad bill and return it to Congress."

On March 2 the President addressed letters to Chairman Cuyler of the Association of Railway Executives and to executives of the railroad labor organizations, asking them to select such number of representatives as may seem appropriate to them to conduct the conference and negotiations contemplated by Section 301 of the act, and thus initiate the necessary proceedings and to advise Director General Hines of the representatives selected. In the letter to Mr. Cuyler he reviewed the negotiations which had led up to this stage and added:

"Since the railroad companies have now resumed the operation of their properties, and since the transportation act has become a law, the way is open for the immediate handling of the wage matter in accordance with the procedure contemplated by that law.

"I believe all will agree that the matter calls for the earliest disposition and for the most active and earnest cooperation to avoid any delay whatever in bringing it to a conclusion. Section 301 of the transportation act contemplates that the carriers and employees may and ought to select representatives who will in effect constitute a bipartisan board for the purpose of attempting by conference to agree upon a solution of wage problems subject to other provisions of the law.

"In view of the generality of these demands, affecting the railroad employees on all the railroads which have been under federal control, and in view of the manifest desirability and justice of the earliest possible disposition of the demands, I request that the railroad companies select such number of representatives as may seem appropriate to them to conduct the conference and negotiation contemplated by Section 301 to the end that such representatives may promptly meet in conference with representatives selected by the employees in accordance with the request I am making of them and may thus initiate the necessary proceedings.

"I shall be obliged if you will advise the director general of railroads as to the representatives selected as here requested. As soon as he receives such advice, and advice as to representatives selected by the employees, he will arrange for all such representatives to begin their conferences and at such conferences questions of procedure can be settled and any question that may be raised as to whether the number of representatives of either the carriers or employees is sufficient can also be dealt with.

"I understand that your association represents almost all the principal railroad companies in the country, and I am proceeding on the assumption that whatever is done by the railroad companies included in your association will for practical purposes serve as an effective and adequate dealing with the problem, and that other railroad companies so far as they may be interested will speedily associate themselves with the companies of your association in carrying the matter forward. I am therefore not undertaking to address individually all the railroad companies in the country."

Resolutions from Labor Leaders

The resolutions presented by the labor committee, prepared after several conferences in which Glenn E. Plumb participated, expressed vigorous opposition to the provisions for the creation of the Railroad Labor Board, which were said to represent an attempt to deprive the railroad employees of their former "inherent right" to determine their wages by negotiation between employee and employer.

The resolutions submitted by the railroad labor leaders follow:

"Whereas, The Congress of the U. S. has passed a bill known as the Transportation Act, 1920, now before you for your consideration; and,

"Whereas, This bill violates in its provisions the fundamental principles of American government in that it guarantees to the owners of railroad securities a right to charge for the service which railroads afford the public such rates as will produce a minimum net return of 5½ per cent upon that uncertain and intangible thing described in said bill as the 'aggregate value of the railroad properties of such carriers;' and,

"Whereas, This is a grant of a particular exclusive and special privilege distinct from those enjoyed by investors in other securities in other industries; and,

"Whereas, This grant of privilege is not based upon a consideration of services rendered to the public or upon the value rendered by any particular carrier but is an exercise of governmental power for the private interest of a paticular class of men, viz., those who own railroad securities; and,

"Whereas, This bill establishes a tribunal authorized to fix prices to be paid for labor in the operation of such railroads so privately owned, thereby attempting to deprive the employees of railroads of their former inherent right to determine the amount of wages they should receive by negotiation between employer and employee; and,

"Whereas, Such provisions create an invidious class distinction against labor employed upon railroads in contrast with the beneficial class distinction conferred upon investors in railroad securities; and,

"Whereas, Said bill singles out from the broad field of labor employed in other industries labor employed on railroads being subjected to this method of governmental price fixing; and,

"Whereas, We as American citizens believe that this

marks a departure from the principles of American democracy as established in our constitution; and,

"Whereas, We are advised that in order to settle the pending wage questions now undetermined we might, under the provisions of this bill be compelled to submit to an indefinite and unreasonable delay in that we may be required to originate anew with each one of the more than two thousand privately owned railroads the wage questions now under consideration and only after it had been determined in each of such negotiations that an agreement could not be reached could we present such issues to the labor board created by said bill. It is apparent that if the adjustment of these questions is long delayed it will result in great numbers of railway employees leaving the service of the railroads and obtaining employment in other industries under more satisfactory conditions and that such results will seriously hamper the efficient operation of the railroads; and,

"Whereas, The provisions of said bill creating the Labor Board permit indefinite delays in the creation of the Board in that:

1. The Interstate Commerce Commission must first prescribe the regulations under which nominations shall be made and before they can prescribe such regulations they must give notice and hold hearings for the purpose of determining the rank and class of subordinate officials and employees who come within the provisions of this bill; and,
2. Thereafter, appointments must be made by the President; and,
3. Such appointments must be ratified by the Senate, thereby affording further possibility of delay; and,
4. The board then created must establish offices in Chicago, complete its organization and prepare for the beginning of hearings before the solution of any questions can be entertained; and,
5. It is further provided that in case an agreement is reached between officials and employes, or a decision rendered by the adjustment board, should such adjustment boards be mutually agreed to and established, the said Labor Board shall have the power to suspend such agreements or decisions if in the opinion of the Labor Board such agreements or decisions involve such an increase in wages or salaries as will be likely to necessitate a substantial readjustment in the rates of the carrier; and,
6. The bill provides that any decision of the Labor Board affecting increased wages or salaries or improved working conditions cannot become effective unless such decision is concurred in by at least one of the public representatives on said board, thereby conferring upon the representative of the public the arbitrary power to annul any decision that may be unanimously agreed upon by the representatives of the officials and employees; and,

"Whereas, We further believe that the inequities, uncertainties, delays and ambiguities of this bill will promote unrest and intensify existing causes of disagreements and prevent the orderly adjustment of grievances between labor employed upon raidroads; and,

"Whereas, The provisions of this bill abrogate the right and freedom of collective bargaining and substitute therefor an indefinite and uncertain method of compulsory adjustment or arbitration of disputes; now, therefore.

"Be It Resolved, That we, the organized body of employees, making possible the operation of the railway systems of the United States, with a full sense of our responsibility to ourselves, our families and the people of our country, and wholly desirous of assisting in a definite and orderly manner consistent with American constitutions and principles, the reaching of an equitable solution of this problem, do now request that you veto this bill and return it to the Congress of the United States without your approval, firmly believing that only by such a course can an orderly solution of the problem now confronting the American people be achieved, and we respectfully request that you consider this resolution in connection with the memorial addressed to Congress, a copy of which was placed in your hands on February 21."

The executive officers of the railroad labor organizations remained in Washington for several days in conferences and, after apparently reaching the conclusion that the only course remaining to them was to "go along" with the plan presented to them by the President and the new law, for most of the officers have been most reluctant to press the issue to a strike, it was announced on Tuesday that 13 of the organizations had decided to accept the plan. The United Brotherhood of Maintenance of Way Employees and Railroad Shop Laborers did not participate in this decision but announced that it would hold a meeting in Chicago on March 4 to decide on its course of action.

While it is said the preliminary conferences of the bipartisan commission may be held in Washington, Congress has arranged for a general decampment of labor leaders from Washington by deciding upon Chicago as the headquarters of the Railroad Labor Board.

The announcement of the executive committee of the affiliated railroad organizations was as follows:

"A meeting of the duly authorized executives of the standard recognized railroad labor organizations was held March 1 to canvass the action of the representative groups of representatives who have been in conference in this city beginning February 23 to consider the President's letter of February 13, the enactment of the railroad bill and the President's letter of February 28.

"The result of this canvass showed all organizations except the United Brotherhood of Maintenance of War Employees and Railroad Shop Laborers were authorized to make the following announcement as to their policy and attitude:

"Notwithstanding the fact that labor in general and railroad labor in particular, with the full support and co-operation of other bodies representing American citizens, urged the Congress not to pass the railroad bill, and the President to veto the same and return it to Congress, we are now officially advised the President has signed the bill and it is a law.

"Labor's criticisms and protests against the legislation are matters of record and were presented to the Congress, the President and the public.

"We have not changed our views in regard to this legislation and therefore do not endorse the law; however, as American citizens we feel that in the interests of railroad labor there is nothing left for us to do at present except to cooperate with each other in the prompt creation of the machinery provided for in this law.

"In the case of the United Brotherhood of Maintenance of Way Employees and Shop Laborers, this organization has not had duly authorized representatives in conference in this city. Therefore, in compliance with their law it is necessary to convene such representatives. This meeting is to be held in Chicago, Ill., Thursday, March 4, when definite action will be taken."

No further action will be taken by the American Federation of Labor in regard to the bill signed by the President over the protest of organized labor, according to a statement by Samuel Gompers, president of the federation, at Miami, Fla. "What's the use?" Mr. Gompers was quoted as saying.

The Plumb Plan League, through which much of the opposition to the railroad bill was voiced, signalized the taking effect of the bill by removing its offices from the Munsey Building, in Washington, to larger quarters from which to conduct its proposed political campaign for the purpose of defeating all Congressmen who voted for the bill and bringing about the control of the railroads under the Plumb plan. The new offices occupy an entire floor of the new building erected by the machinists' union, which is not only nearer the Capitol than the former offices, but is also located across the street from the American Federation of Labor building in such a way that the league may be able to conduct what is by many deemed a most necessary part of its propaganda by flaunting the gold plate lettering on its windows in the face of Mr. Gompers as he sits in his office.

Train Accidents in January*

The following is a list of the most notable train accidents that occurred on the railways of the United States in the month of January, 1920:

COLLISIONS

Date	Road	Place	Kind of accident	Kind of train	Killed	Injured
1	Texas & Pacific..	Aledo, Tex...	bc	P. & F...	0	23
†11	Oregon Short L..	Chalk	xc	P. & F...	2	0
*16	Detroit, T. & I.	Hamler	rc	F. & F...	2	6

DERAILMENTS

Date	Road	Place	Cause of derailment	Kind of train	Killed	Injured
1	Southern	Clinton, Tenn..	d. switch...	P.	0	0
1	Missouri, K. & T.	Huntsdale, Mo.	acc. obst....	P.	1	1
†3	Chicago G. W..	Wyeth, Mo....	b. rail.....	P.	1	89
3	Pennsylvania ...	Shawkin	acc. obst...	P.	0	2
6	Louisi. & W....	Newhope, Ky..	b. rail.....	P.	0	38
7	Chi., Mil. & St. P	Watauga	d. bridge...	P.	0	18
17	Texas & Pacific.	Colorado	d. track....	P.	0	5
20	New York Cen..	Wesleyville, Pa.	ice	P.	0	0
†20	Pennsylvania ...	New Waterford.	unx.	P.	1	16
23	Illinois Central..	Stoy	acc. obst...	P.	0	2
26	Erie	Pottersburg.....	unx.	P.	0	4
27	Atlantic C. L...	Dillon, S. C...	b. rail.....	P.	0	0
29	Louisville & N..	Sulphur, Ky...	——	P.	0	1
31	Rutland.....	Grand Isle, Vt.	b. rail.....	P.	0	15

OTHER ACCIDENTS

Date	Road	Place	Cause of accident	Kind of train	Killed	Injured
1	West. Maryland.	Clear Sps., Md.	Boiler	F.	3	3

The trains in collision on the Texas & Pacific near Aledo, Texas, on the first of January, about 4 a. m., were an eastbound passenger and a westbound freight. Both locomotives, one baggage car and four freight cars were damaged. Twenty-two passengers and one employee were injured, one of the passengers being a man on the freight train in charge of an emigrant car.

The trains involved in the collision on the Oregon Short Line near Chalk, Idaho, on the 11th of January, about 1 a. m. were a westbound freight and a following passenger train, No. 17. The freight train had to be divided into two parts to ascend a grade, and 32 cars at the rear eluded control and ran back into the head of the passenger train. The passenger train was flagging through the block, and the flagman, having seen the approaching freight cars, succeeded in having the passenger train stopped, and it was moving backward, about eight miles an hour, when struck. The engine of the passenger train, and 15 cars and the caboose of the freight were badly damaged. Two drovers in the caboose of the freight train were killed.

The trains in collision on the Detroit, Toledo & Ironton at Hamler, Ohio, on the 16th, were a northbound wrecking train and a local freight. The wrecking train, having right of road only to the south switch, ran beyond its limit and collided with the freight, which was switching in the yard. The caboose of the wrecking train was at the front end, and this was wrecked. The caboose stove was overturned and the wreck took fire; and of the men in the car, two were burned to death and six others were injured.

The train derailed near Clinton, Tenn., on the first of January, was the southbound "Carolina Special." The engine and tender were thrown off the track while running at 15 miles an hour, and were overturned; but the engineman and fireman escaped injury, and no cars were derailed. The cause of the derailment was a loose switch rail.

The train derailed near Huntsdale, Mo., on the first of January, was eastbound passenger No. 10. The locomotive was thrown off the track, while moving at about 35 miles an hour, by striking a bowlder which had fallen from a high cliff, and, with three cars, was ditched. The fireman was killed, and the engineman injured.

*Abbreviations and marks used in Accident List: rc, Rear collision——bc, Butting collision——xc, Other collisions——b, Broken——d, Defective——unf, Unforeseen obstruction——unx, Unexplained——derail, Open derailing switch——ms, Misplaced switch——acc, obst., Accidental obstruction——malice, Malicious obstruction of track, etc. ——boiler, Explosion of locomotive on road——fire, Cars burned while running——P. or Pass., Passenger train——F. or Ft., Freight train (including empty engines, work trains, etc.)——Asterisk, Wreck wholly or partly destroyed by fire——Dagger, One or more passengers killed.

The train derailed near Wyeth, Mo., on the 3d, was westbound passenger No. 3. Running at 40 miles an hour, the engine was thrown off the track by a broken rail, and five coaches fell down a bank. One passenger was killed and four seriously and 85 slightly injured. The broken rail was one of 85 lb. section, laid in 1904. The breakage started in a small transverse fissure.

The train derailed on the Pennsylvania Railroad near Shamokin, Pa., on the night of the third, was eastbound express No. 510. The locomotive was knocked off the track and overturned by a freight car which had been derailed on a side track and fell against the passenger engine, the derailment of the car happening at the moment the passenger train was passing. The engineman and fireman were injured. The freight car which made the trouble had been part of a train left standing on the main track at Scott Colliery, on a branch, some distance from the main line, and had run at high speed down a steep grade to a passing track adjacent to the main line. The car ran some distance on the passing track and was derailed at a derailing switch, which was intended to protect trains on the main line from an accident of this kind; but the car was running so fast that its body was separated from its trucks and fell against the locomotive, as before stated.

The train derailed on the Louisville & Nashville at Newhope, Ky., on the 6th was northbound passenger No. 22. Twenty-five passengers, 10 employees and three other persons were injured. The cause of the derailment was a broken rail.

The train derailed near Watauga, S. D., on the 7th was the westbound Columbian express. The third and fourth cars in the train, day coaches, broke through a bridge which had been weakened by fire and fell to the creek, about nine feet below. Of the 18 injuries to persons, only one was classed as serious.

The train derailed near Colorado, Tex., on the 17th was eastbound passenger No. 2. Running at 18 miles an hour the engine and three coaches were overturned. Five passengers were injured. The derailment was due to a loose rail.

The train derailed at Wesleyville, Pa., on the 20th was westbound passenger No. 21. Running at about 30 miles an hour as it passed a coal chute the locomotive was thrown off the rails by striking a mass of ice. After running several hundred feet to a switch, it was ditched.

The train derailed near New Waterford, Ohio, on the 20th was westbound express passenger No. 1007. The train consisted of two locomotives and 11 cars; nine of the cars went off the track, and some of them fell down a bank about ten feet. One passenger was killed and 13 passengers, two employees and an express messenger were injured. The cause of the derailment was diligently sought for, but was not discovered. The roadway was in excellent condition.

The train involved in the accident on the Illinois Central near Stoy, Ill., on the night of the 23d was a westbound passenger. The engine was lifted and thrown off the track by an explosion of nitro-glycerin. The track was damaged and the engine was separated from its tender, but the only injuries reported were those of the engineman and fireman, who were slightly cut by flying glass. The nitro-glycerin had been placed or dropped by some person or persons unknown.

The train derailed near Pottersburg, Ohio, on the 26th was eastbound passenger No. 16. Running at about 40 miles an hour the tender was thrown off the track by some cause unknown. After running about 200 feet to a switch the whole train was derailed and two cars were overturned; but no passengers were seriously injured. The engineman, the fireman, the baggageman and one mail clerk were injured.

The train derailed near Dillon, S. C., on the 27th was northbound passenger No. 86. Running at about 25 miles

an hour the engine and six cars were thrown off the track in a cut, and the engine was overturned. All of the passengers and trainmen escaped without serious injury. The cause of the derailment was a broken rail.

The train derailed near Sulphur, Ky., on the 29th was eastbound passenger No. 4, second section. Running at about 30 miles an hour, the locomotive and first five cars were derailed, and the engine and three coaches were overturned. The baggageman sustained slight scratches, but the passengers and all the rest of the trainmen escaped serious injuries.

The trail derailed on the Rutland Railroad near Grand Isle, Vt., on the 31st of January was northbound passenger No. 51, consisting of two locomotives and eight cars, all of steel or with steel underframes. Moving at moderate speed the second locomotive was thrown off the track by a broken rail and was followed by six cars, though one baggage car was found on the rails after the train stopped. One sleeping car fell to the ice of Lake Champlain and broke through, and some of the passengers were thoroughly wet in freezing water. The temperature of the atmosphere was reported 38 deg. below zero. Fifteen passengers in the overturned car were somewhat cut and bruised, and some of them were frost-bitten. This accident was reported in the *Railway Age* February 6, page 434.

The train involved in the accident on the Western Maryland at Clear Spring, Md., on the 1st of January was an eastbound freight. One of the two locomotives drawing the train was wrecked by the explosion of its boiler, and three employees on it were killed. Part of the wreck fell on the other locomotive and three men on that engine were injured.

Canada.—A collision on the Canadian Pacific near Corbeil, Ont., on the 25th resulted in the death of nine persons and the injury of 25. This collision was reported in the *Railway Age* of January 30 and February 6. Westbound passenger No. 1 stopped because of failure of steam in extremely cold weather, was run into at the rear by the second section of the same train, torpedoes placed by the flagman of the standing train having failed to attract the attention of the engineman of the second section. The principal derailments reported in Canada in January were those at Mackay's Siding, N. S., on the 10th; at Marbleton, Que., on the 12th and at Campbellford, Ont., on the 21st. In the last mentioned case eight persons were reported injured; the others resulted in no very serious injuries.

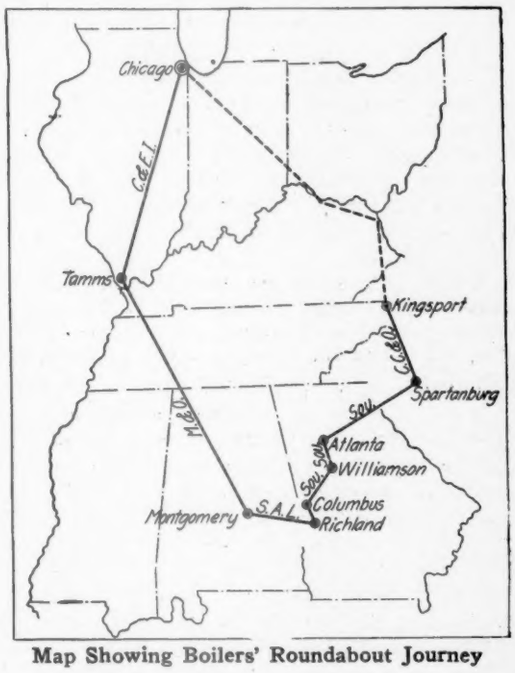
Electric Car Accidents.—Of the five electric car accidents reported in the newspapers of the United States as occurring in the month of January only one appears to have been attended with fatal results. This was the derailment at Prince Crossing, Ill., near Elgin, on the night of the second, when a passenger car struck a freight car which had fallen on the track from a train of the Chicago Great Western, which crosses above the electric line. One motorman and one passenger were killed and eight passengers were injured. The freight car had been derailed and been thrown out of a freight train without doing damage to the rest of the train; and the two parts of it were afterward coupled together by the trainmen without the loss of a car being discovered. The other accidents were at Allen, Tex., Richmond, Ind., Freemont, Ohio, and Fort Worth, Tex. In the last named case a locomotive struck, at the same time, two electric cars on a crossing, one moving east and the other moving west. Nine persons were reported injured.

New enterprises were incorporated under the laws of the principal states in February, with an authorized capital of $1,158,861,000, involving 945 concerns, as compared with a total of $323,635,000 in the same period last year, when less than 500 companies were organized.

Large Boilers Present Routing Problem

TWO HIGH-POWER BOILERS, each 11 ft. square, purchased by J. F. Davis & Co., Chicago, from the DuPont Company, Barksdale, Wis., and sold by the former on the basis of delivery to the Tennessee Pulp Corporation, Kingsport, Tenn., recently presented a routing problem which has required over two months for solution. Soon after the purchase was made the boilers were loaded on flat cars, and subsequently it was discovered that the cars and their cargo measured 11 ft. and 4 in. from the top of the rails to the top of the boilers and 11 ft. wide at the top. These measurements are greater than the clearances on the majority of central western railways, and it seemed impossible to move the shipment to its destination.

For approximately three months after the boilers were loaded and ready to move the shipment was detained at the point of origin, while central western traffic experts endeavored to route the shipment over lines on which the height and width of the loaded cars would not interfere with their



Map Showing Boilers' Roundabout Journey

movement. It was decided at last to present the problem to the freight traffic department of the Chicago Association of Commerce, and in turn to J. F. Morton, who is in charge of the association's "Way to Ship" publication.

The solution presented by Mr. Morton and the association's freight traffic department is best explained by reference to the map. The shipment is now on a journey of approximately 1,467 miles to Kingsport, whereas the usual shipping distance between these points is 647 miles. It was necessary in solving this problem to find a route for the shipment that afforded the necessary clearances both in height and width. The following table gives the routing, mileage and clearances in height and width:

	Miles	Height	Width
C. & E. I., Chicago to Tamms, Ill.	362	17′	11′
M. & O., Tamms to Montgomery, Ala.	483	18′	11′
S. A. L., Montgomery to Richland, Ga.	110	18′ 3″	11′
S. A. L., Richland to Columbus, Ga.	39	18′ 6″	11′ 4″
Southern, Columbus to Williamson, Ga.	71	17′	11′
Southern, Williamson to Atlanta, Ga.	26	17′ 7″	11′
Southern, Atlanta to Spartanburg, S. C.	192	18′ 1″	11′
C., C. & O., Spartanburg to Kingsport, Tenn.	184	17′ 6″	11′

The dotted line on the map shows the route that would be taken by an ordinary shipment, and the solid lines show the route as outlined by Mr. Morton and over which the shipment is now moving.

General News Department

The Railway Association of Canada has announced an embargo on the sending of Canadian freight cars into the United States. Because of the shortage of cars in the United States American railroads are not returning a sufficient number of Canadian cars, according to the Association, and the embargo is considered necessary in order to relieve the lumber famine in Canada.

The Farmers' National Council, which claims to represent 750,000 farmers in 18 states, recently adopted resolutions urging a two-year extension of government control of the railroads and endorsing the enactment by Congress of a law embodying the principles of the Plumb Plan. These resolutions were adopted in support of the general principles proclaimed by the National Farmer-Labor Co-operative Conference held at Chicago from February 12 to 14.

The threatened strike of the 300,000 members of the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers, has not been cancelled but has been merely postponed, according to a recent announcement of Allen C. Barker, president of the brotherhood. The announcement was accompanied by statements intimating that the strike will be called if relief is not granted speedily to the members of the brotherhood in the form of wage advances.

Reports of the merger of the Northern Pacific, the Great Northern, and the Chicago, Burlington & Quincy, which have been widely circulated throughout the country, have been emphatically denied by executive officers of the three railroads involved. The story of the merger as announced in the daily press is absolutely without foundation, according to these officers, and is probably due to that feature of the railroad bill permitting consolidation of railroads in accordance with the general consolidation plan to be prepared by the Interstate Commerce Commission.

The Executive Committee of the Steam Railroad section of the National Safety Council, at a recent meeting held at Chicago, planned the work of that section for 1920. Improvements were planned in the section's bulletin service, the program for the 1920 Safety Congress was discussed and Dr. Payne's plan for safety education, a description of which appeared in the *Railway Age* of January 30 (page 383), was endorsed. The work of the Bulletin Committee of the section, as outlined at this meeting, includes the preparation of a weekly illustrated bulletin on some hazard peculiar to steam railroad operation, the issuance monthly of a mimeographed letter and safe practices pamphlets.

The mechanical and electrical features of the new Westinghouse electric passenger locomotives for the Chicago, Milwaukee & St. Paul were explained by N. W. Storer, of the Westinghouse Electric & Manufacturing Company, in an illustrated talk given before the Railway Club of Pittsburgh, on February 26. As the slides were thrown on the screen, Mr. Storer told how each part of the locomotive was constructed and the reason for the adoption of that particular feature. The construction of the wheel trucks, the method of supporting the cab, the drawbar connection and the method of drive were points of particular interest to the railway men present. A description of the details of this locomotive will appear in an early issue of the *Railway Age*, together with a similar description of the electric locomotive built for the St. Paul by the General Electric Company.

The joint ticket offices participated in by the Pennsylvania Railroad number 26, in 23 different cities; and George D. Dixon, vice-president, announces that the company deems it to the advantage both of itself and the public that these offices be continued permanently. The other roads which share these offices hold the same view, at least to the extent that it has been agreed to maintain all of the offices for the present. These offices are in the following cities: Atlantic City, N. J.; Baltimore, Md.; Brooklyn, N. Y.; Buffalo, N. Y.; Chicago, Ill.; Cincinnati, O.; Dayton, O.; Grand Rapids, Mich.; Indianapolis, Ind.; New York city, N. Y.; Newark, N. J.; Norfolk, Va.; Philadelphia, Pa.; Peoria, Ill.; Old Point Comfort, Va.; Pittsburgh, Pa.; Reading, Pa.; Rochester, N. Y.; St. Louis, Mo.; Toledo, O.; Washington, D. C.; Williamsport, Pa.; Wilmington, Del. It is the intention to rearrange the offices so that each road will have its own separate employees, at a designated part of the counter, so that there may be no misunderstanding as to responsibility for efficient service.

Correction

In the article on "Freight Traffic Movement and Car Performance," published in the *Railway Age* of February 6, 1920, page 418, there was included the following statement taken from a foot-note to the report: "Because of a change in the reports, however, this report covers 31 days, while that for December, 1918, covered only 30 days." This foot-note applied to only one road included in the report and not to the total figures used in the article.

Castleton Bridge

The New York State Court of Appeals on March 2 handed down a decision in favor of the New York Central in its suit to annul the New York statute forbidding the construction of a bridge of two spans across the Hudson river at Castleton, N. Y., nine miles south of Albany. The court holds that the federal government, which has authorized the construction of a bridge of two spans, has authority concerning the use of lands under water superior to the authority of the state. It is understood that the railroad company will now proceed with its arrangements for beginning the construction of the bridge.

The city of Albany had been back of the restrictive legislation, the plea of the city being that the construction of a freight line around the city was inimical to its interest. Albany's objection was based on the claim that a pier in the river would be an unreasonable obstacle to navigation, but this plea was rejected by the secretary of war, and it was shown that a single span bridge would require 18,000 tons of steel more than a bridge of two spans. The design prepared by the railroad provides for a span over the main channel 600 ft. long which allows for a channel wider than that in many parts of the river below the bridge. A single span would have to be 1,000 ft. long.

The plans for the bridge were the subject of articles in the *Railway Age* of February 2, 1917, page 192, and July 12, 1918, page 46.

Map Making Bureaus Co-ordinated

The United States Board of Surveys and Maps, created on December 30, 1919, by an executive order of the President, has perfected a permanent organization and will hold its first public meeting on March 9. The object of this board, as outlined in the President's order, is to co-ordinate the activities of the various map-making agencies of the executive departments of the government and avoid the unnecessary duplication of work which may come about very readily when maps and surveys are being made by independent branches of the government. Under the by-laws of this board, which were adopted on January 16, the board will hold meetings on the second Tuesday of January, March, May, September and November of each year, and solicits representation by various interested activities at these meetings. The board proposes to establish at an early date a map information office in the Interior Department building where it will

collect and catalogue as rapidly as possible information concerning the maps, surveys, etc., prepared under the direction of the federal government or other governmental and private agencies. The board is composed of one representative each of the Corps of Engineers, the Coast and Geodetic Surveys, the Geological Survey, the General Land Office, the Topography Branch of the Post Office Department, the Bureau of Soils of the Department of Agriculture, the Reclamation Service, the Bureau of Public Roads, the Bureau of Indian Affairs, the Mississippi River Commission, the United States Lake Surveys, the International Boundary Commission, the Forest Service, and the Hydrographic Office of the Navy.

Cleaning Up for Private Operation

"Labor," the Plumb Plan newspaper, says that one of its readers employed on a southern railroad has sent it a copy of a circular issued by the general manager to all stationmasters, agents, and other officers in charge of buildings, in which he directs that all windows in passenger stations be cleaned by March 1, 1920. "Of course," the paper says, "the cleaning will be done at government expense, and will effect just that much of a saving for the owners of the road."

A. I. E. E. to Hold Electric Traction Meeting

The 358th meeting of the American Institute of Electrical Engineers will be held in Pittsburgh on Friday, March 12, under the auspices of the Pittsburgh Section and the Traction and Transportation Committee. All of the meetings and the dinner will be held at the William Penn Hotel.

The morning will be devoted to an inspection trip through the East Pittsburgh plant of the Westinghouse Electric & Manufacturing Company, where the visitors will be given an opportunity to inspect the electric passenger locomotives which this company is now building for the Chicago, Milwaukee & St. Paul. Immediately after the inspection the visitors will be given a luncheon in the new lunch club of the Westinghouse company.

The afternoon session will begin at 2:30 o'clock in the ballroom of the William Penn Hotel. The following papers will be presented:

1. Short Circuit Protection for Direct-Current Sub-stations—J. J. Linebaugh.
2. Flashing of 60-Cycle Synchronous Converters and Some Suggested Remedies—Marvin W. Smith.
3. Automatic Railway Sub-stations—Frank W. Peters.
4. Automatic Sub-stations for Heavy City Service—R. J. Wensley.

The authors of papers numbers 1 and 3 are from the General Electric Company, and the authors of numbers 2 and 4 are from the Westinghouse Electric Company.

A subscription dinner will be held at 6:30 o'clock at which the members and delegates will be welcomed by H. D. Shute, vice-president of the Westinghouse Electric & Manufacturing Company, and some prominent official of one of the operating companies in the Pittsburgh district.

At the evening meeting the design of the new type of electric locomotive now being furnished the Chicago, Milwaukee & St. Paul will be presented by representatives of both of the large electric companies, N. W. Storer presenting the Westinghous design, and O. W. Batchelder presenting the General Electric design.

Calvert Townley, president of the institute, will preside at the meetings.

Farmers Approve Railroad Bill

President Wilson was asked by farmers to approve, and by other farmers to disapprove, the Transportation Act. W. I. Drummond, chairman of the board of governors of the International Farm Congress, and T. C. Atkeson, Washington representative of the National Grange, approved the law. They spoke for representatives of the International Farm Congress, the American Farm Bureau Federation, the National Grange, the National Farmers' Union, the Farmers' National Congress, the National Milk Producers' Federation, the American Cotton Association, the Dairymen's League of New York and several state farmers' unions. They called for the safeguarding and protection of every right of private property and declared against government ownership or continued operation of the railroads by the government. They urged the necessity for settled conditions in transportation before the next season for crop movements.

George P. Hampton, managing director of the Farmers' National Council; H. A. Bissonnette, president of the Iowa State Branch of the American Society of Equity; and E. C. Lassater, live stock raiser, presented arguments for a veto.

"The Southern Serves the South"

Fairfax Harrison, president of the Southern Railway, in announcing the resumption of direct operation of the company's lines, addresses officers and employees "with hearty greetings of affectionate friendship and good-will." He says: "I expect to renew with you that measure of alert service to the public and individual success which distinguished our operations prior to Federal control. Remember that you are again at home, that you are working 'on your own,' as part of an organization in which loyalty, initiative and results are recognized. Remember, also, that now once more 'The Southern Serves the South.'"

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—F. M. Nellis, 165 Broadway, New York City. Next convention, May 5-7, 1920, Chicago.

AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—F. A. Pontious, Supervisor of Demurrage and Storage, C. & N. W. Ry., Chicago.

AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—S. W. Derr, C. R. R. of N. J., Philadelphia, Pa.

AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, Illinois Central, Chicago. Next annual meeting, June, 1920.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. R. Reynolds, C. G. W. R. R., Chicago.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—J. Rothschild, Union Station, St. Louis, Mo.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—E. B. Burritt, 8 W. 40th St., New York.

AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOCIATION.—C. F. J. Dell, 50 E. 42nd St., New York.

AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPE FITTERS' ASSOCIATION.—Otto E. Schlinck, 185 W. 5th St., Peru, Ind.

AMERICAN RAILROAD ASSOCIATION.—J. E. Fairbanks, 75 Church St., New York:

- Section I, Operating (including former activities of Association of Railway Telegraph Superintendents).—W. J. Fripp (chairman), N. Y. C. R. R., New York, N. Y.
  - Telegraph and Telephone Division.—J. F. Caskey (chairman), Supt. of Telegraph, Lehigh Valley.
- Section II, Engineering.—E. H. Fritch, 431 South Dearborn St., Chicago.
  - Signal Division.—H. S. Balliet, 75 Church St., New York. Next meeting, March 15-16, Congress Hotel, Chicago.
- Section III, Mechanical (including former activities of Master Car Builders' and Master Mechanics' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago. Next convention, June 9-16, 1920, Atlantic City, N. J.
- Section IV, Traffic.—Robert C. Wright (chairman), Assistant Director, Division of Traffic, U. S. R. A., Washington, D. C.
- Section V, Transportation (including former activities of Association of Transportation and Car Accounting Officials).—E. J. Pearson (chairman), Federal Manager, N. Y., N. H. & H. R. R., New Haven, Conn.
- Section VI, Purchases and Stores (including former activities of Railway Storekeepers' Association).—J. P. Murphy, N. Y. C. R. R., Collinwood, Ohio.
- Section VII, Freight Claims (including former activities of the Freight Claim Association).—Lewis Pilcher, 431 South Dearborn St., Chicago.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Austin Station, Chicago. Next convention, October 19-21, 1920, Atlanta, Ga.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—(Works in co-operation with the American Railroad Association, Section II.) E. H. Fritch, 431 South Dearborn St., Chicago. Next convention, March 16-18, 1920, Congress Hotel, Chicago.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—(See American Railroad Association, Section III, Mechanical.)

AMERICAN RAILWAY PERISHABLE FREIGHT ASSOCIATION.—E. F. McPike, 135 E. 11th Place, Chicago. Regular meetings, 2nd Wednesday in March and September.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—R. D. Fletcher, 1145 East Marquette Road, Chicago.

AMERICAN SOCIETY FOR TESTING MATERIALS.—C. L. Warwick, University of Pennsylvania, Philadelphia, Pa. Next annual meeting, June 21, 1920, New Monterey Hotel, Asbury Park, N. J.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—Col. H. S. Cracker (acting secretary), Engineering Societies Building, 33 W. 39th St., New York. Regular meetings, 1st and 3d Wednesday in month, except July and August, 33 W. 39th St., New York.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York.

AMERICAN STEEL TREATERS' SOCIETY.—W. H. Eisenman, 154 East Erie St., Chicago.

AMERICAN TRAIN DESPATCHERS' ASSOCIATION.—D. L. Darling, Northern Pacific Ry., Spokane, Wash.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, B. & O., Mt. Royal Sta., Baltimore, Md. Next annual meeting, February, 1921, San Francisco.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—Willis H. Failing, C. R. R. of N. J., Jersey City, N. J. Next meeting, May, 1920, Atlantic City.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago.

ASSOCIATION OF RAILWAY EXECUTIVES.—Thomas De Witt Cuyler (chairman), 61 Broadway, New York, N. Y.
ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—(See American Railroad Association, Section I, Operating.)
ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—(See American Railroad Association, Section V, Transportation.)
BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—M. J. Trees, Chicago Bridge & Iron Works, Chicago.
CANADIAN RAILWAY CLUB.—W. A. Booth, 131 Charron St., Montreal, Que.
CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, New Morrison Hotel, Chicago.
CAR FOREMEN'S ASSOCIATION OF ST. LOUIS.—Thomas B. Koeneke, Federal Reserve Bank Bldg., St. Louis, Mo.
CENTRAL RAILWAY CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meetings, 2d Thursday in November and 2d Friday in January, March, May and September, Hotel Statler, Buffalo, N. Y.
CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—J. C. Keene, General Car Inspector, Wabash R. R., Decatur, Ill.
CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S SUPPLY MEN'S ASSOCIATION.—D. B. Wright, Lehon Company, 45th and Oakley Sts., Chicago.
EASTERN RAILROAD ASSOCIATION.—D. G. Stuart, Washington, D. C.
FREIGHT CLAIM ASSOCIATION.—(See American Railroad Association, Section VII, Freight Claims.)
GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Sta., Chicago. Regular meetings, Wednesday preceding 3d Friday in month, Room 856, Insurance Exchange Bldg., Chicago.
INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, B. & O., Lima, Ohio.
INTERNATIONAL RAILWAY FUEL ASSOCIATION.—J. G. Crawford, 702 E. 51st St., Chicago. Next annual meeting, May, 1920, Hotel Sherman, Chicago.
INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabash Ave., Winona, Minn.
MAINTENANCE OF WAY MASTER PAINTERS' ASSOCIATION.—E. E. Martin, Union Pacific R. R., Room No. 19, Union Pacific Bldg., Kansas City, Mo. Next convention, October 5-7, 1920, Detroit, Mich.
MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York. Next annual meeting, May 25-28, Curtis Hotel, Minneapolis, Minn.
MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—A. P. Dane, B. & M., Reading, Mass.
MASTER CAR BUILDERS' ASSOCIATION.—(See American Railroad Association, Section III, Mechanical.)
NATIONAL ASSOCIATION OF RAILWAY AND UTILITIES COMMISSIONERS.—James B. Walker, 49 Lafayette St., New York. Next convention, November, 1920, Washington, D. C.
NATIONAL FOREIGN TRADE COUNCIL.—O. K. Davis, 1 Hanover Square, New York. Next convention, May 12-15, 1920, San Francisco.
NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, Kelly-Derby Co., Peoples Gas Bldg., Chicago. Annual exhibition, March 15-18, Coliseum and Annex, Chicago.
NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2d Tuesday in month, excepting months of June, July, August and September.
NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meeting, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.
PACIFIC RAILWAY CLUB.—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meeting 2d Thursday in month, alternately in San Francisco and Oakland.
RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1116 Woodward Bldg., Washington, D. C. Next convention, May 12, 1920, Hotel Traymore, Atlantic City, N. J.
RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 30 Church St., New York. Next annual dinner, March 31, 1920, Waldorf-Astoria Hotel, New York.
RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in month, except June, July and August, Americus Club House, Pittsburgh, Pa.
RAILWAY DEVELOPMENT ASSOCIATION.—D. C. Welty, Missouri Pacific R. R., Little Rock, Ark.
RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. Scribner, General Electric Co., Chicago. Annual meeting with Association of Railway Electrical Engineers.
RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—D. L. Eubank, Galena Signal Oil Company, Richmond, Va.
RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.
RAILWAY REAL ESTATE ASSOCIATION.—R. H. Morrison, C. & O., Richmond, Va.
RAILWAY SIGNAL ASSOCIATION.—(See American Railroad Association, Section II, Signal Division.)
RAILWAY STOREKEEPERS' ASSOCIATION.—(See American Railroad Association, Section VI, Purchases and Stores.)
RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Next convention, June 9-16, Atlantic City, N. J.
RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Co., 30 Church St., New York.
ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W. Ry., Sterling, Ill.
ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August.
SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, West Nyack, Rockland County, New York.
SOCIETY OF RAILWAY FINANCIAL OFFICERS.—L. W. Cox, 1217 Commercial Trust Bldg., Philadelphia, Pa.
SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3d Thursday in January, March, May, July, September and November, Piedmont Hotel, Atlanta.
SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, Western Ry. of Ala., Atlanta, Ga.
SUPPLY ASSOCIATION OF AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—C. N. Thulin, Duff Manufacturing Company, 935 Peoples Gas Bldg., Chicago.
TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo Iron Works, Hillburn, N. Y.
TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. R. R., Cleveland, O.
WESTERN ASSOCIATION OF SHORT LINE RAILROADS.—Clarence M. Oddie, Mills Bldg., San Francisco.
WESTERN RAILWAY CLUB.—J. M. Byrne, 916 W. 78th St., Chicago. Regular meetings, 3d Monday in month, except June, July and August.

Traffic News

The Canadian National and the Canadian Pacific intend to apply to the board of railroad commissioners for authority to increase both passenger and freight rates; and their proposal is expected to be about 40 per cent above present tariffs.

The sending of Canadian freight cars into the United States has been embargoed by the Railway Association of Canada. This action has been made necessary by delays in the return of cars which have been sent to the United States and also by an urgent demand for cars to carry lumber between points in Canada.

The Central of New Jersey and the Philadelphia & Reading, which before the war ran express trains "every hour, on the hour," all day, between New York and Philadelphia—which service has been greatly reduced under Federal operation—has already restored three of the trains which were taken off—those at 7 and 10 a. m. and 5 p. m. Trains now leave New York at 7, 8, 10 a. m., noon, 2, 4, 5, 6, and 10 p. m., and 12:15 a. m.

The Department of Agriculture has issued an amendment to its regulations governing the entry of railway cars and other vehicles and express packages, baggage or other materials from Mexico, to include the state of Sonora. This move has been taken because of the appearance of the pink bollworm in cotton seed being shipped from Sonora by way of Nogales, Mex, and Douglas, Ariz. The regulations require inspection and disinfection. Lower California is the only remaining state in Mexico now exempt from the regulation.

The silk clause in the new freight classification, forbidding the acceptance of silk for transportation by freight, except in carloads, because of the excessive value of many shipments, has been made the subject of a court injunction at Philadelphia, Judge Thompson, of the federal court, having granted a preliminary injunction on the application of the Viscose Company, maker of artificial silk. At New York City Judge J. M. Mayer refused to grant an injunction in a similar case. The Railroad Administration, arguing against the injunction, said that the new clause in the tariff (not applicable to manufactured silks) was deemed necessary because of wholesale robberies.

The Pennsylvania Railroad announces that the "shipping day plan" of handling less than carload freight in through cars from its numerous Philadelphia stations will be continued. The value of this method of handling l. c. l. merchandise is declared to have been fully demonstrated. It has eliminated a large amount of delay incident to the rehandling of freight through transfer stations, and during the year 1919 it saved 10,000 cars in the Philadelphia district alone. There has been a reduction of congestion of teams at the freight stations. Shipping Day Guides have been prepared for all the principal cities on the Pennsylvania system, and with the aid of these the patrons of the road, through their co-operation, have aided materially in saving cars.

The Hudson & Manhattan Railroad, operating subways between Manhattan (New York) and Jersey City, N. J., and Hoboken, N. J., announces that beginning April 4 the uniform fare across the river—that is, between New York state and New Jersey, will be eight cents. To and from Hudson Terminal, the downtown New York terminus, this is an increase of three cents, while to and from the uptown stations, those on Sixth avenue, the increase is one cent. For rides wholly in New York or wholly in New Jersey the rate remains five cents. The city authorities and business organizations in Hoboken and in Jersey City are preparing to send a protest to the Interstate Commerce Commission. The City Commission of Jersey City declares that the city has a contract with the railroad company restricting the fare to five cents between points in New Jersey and the downtown New York terminal.

Commission and Court News

Interstate Commerce Commission

The Commission has issued a decision declining to modify its regulations for the transportation of phosgene, but revising the regulations for the transportation of other dangerous chemicals and gases.

Personnel of Commissions

W. P. Geary, rate expert for the Railroad Commission of California, has been appointed an examiner for that body.

Wilbur LaRoe, Jr., has been appointed chief examiner of the Interstate Commerce Commission succeeding Henry W. Thurtell, resigned to become commerce counsel of the Southern Railway.

George N. Brown, attorney examiner of the Interstate Commerce Commission, has resigned to become associated with George L. Boyle in the practice of law, with office at Washington.

State Commissions

The Northwestern Pacific has applied to the Railroad Commission of California for an order approving an agreement between the company and the United States Railroad Administration under which the Railroad Administration is to finance the purchase of 100 double-sheathed box cars. A series of notes to bear interest at the rate of six per cent, the last of which is due in 1935, is provided for in the agreement.

Locomotive engines should not be operated at so high a rate of speed as to cause such a degree of discomfort to enginemen and firemen as to endanger their health or to impair their efficiency. This is the decision of the New York State Public Service Commission, second district, on a complaint of the brotherhoods that consolidation engines used on the milk trains of the New York, Ontario & Western were unsuitable for the speeds required of those trains. After hearing a good deal of conflicting evidence the commission decided that the engines in question should not be run faster than 30 miles an hour, except under emergencies or unexpected delays, when temporarily the rate might be increased to 35 miles an hour. These speeds must not be permitted except when the engines are in first class condition.

Court News

Duty of Warning and Assisting Passengers

The Michigan Supreme Court holds that where a train stops before reaching a station platform and the distance from the last step to the ground is 20 inches, the ground being so slippery, that a stool cannot be kept in place, the carrier owes to a passenger attempting to alight the duty of warning and assistance.—Chalker vs. D. G. H. & M. (Mich.), 173 N. W. 532.

Water Mains on Right of Way Over City Streets

Where a city has granted to a railroad company the right to cross its streets with its tracks and to carry on its business as a railroad across the streets, the Kentucky Court of Appeals holds that the grant carries with it the incidental power of constructing and maintaining telephone or telegraph wires along the right of way and of laying and maintaining water mains for carrying water for its engines and other purposes essential to its business.—L. & N. vs. Covington (Ky.), 213 S. W. 568.

Effect of Cummins Act on Notice of Loss

The interpretation of the Arkansas Supreme Court of the Cummins Amendment of 1916 is that it prevents carriers of interstate shipments from contracting for notice of claims in less than 90 days, or for filing claims in a shorter period than 4 months, or for the institution of suits on claims for a shorter period than 2 years.—Missouri Pacific vs. Martindale (Ark.), 213 S. W. 777.

Crossing Accident—Last Clear Chance

In a crossing accident case, it appeared that the speed of the train prevented stopping in less than 400 feet, the automobile struck could not be seen until the train was but 200 feet from the crossing, and the automobile was then 40 feet from the track and running only 6 miles an hour, so that it could have been stopped in time if the occupants had been looking. The Missouri Supreme Court held the railroad was not liable under the humanitarian doctrine.—Tannehill vs. Kansas City, C & S. (Mo.), 213 S. W. 818.

Special Agreement as to Reconsignment Unlawful

The St. Louis Court of Appeals holds that a special contract entered into at St. Louis, Mo., between a shipper and a carrier, whereby the carrier was to divert or reconsign a shipment of potatoes at Pittsburgh to Chicago by wire, so as to have it go by a particular train, arriving at Chicago on a particular date, was an agreement for special services prohibited by the Interstate Commerce Act as amended by the Elkins Act, for breach of which no recovery could be had by the shipper.—Cicardi Bros. Fruit, etc., Co. vs. Pennsylvania (Mo.), 213 S. W. 531.

Duty to Collect Undercharge

When the tariff for coal, as filed with the Indiana Public Service Commission, was 65 cents a ton, the agent of a carrier by mistake collected only 60 cents. In a suit for the difference the Indiana Appellate Court holds that as the Indiana statute provides for uniform freight rates, the filing of tariffs, and makes it unlawful to charge any other rate, the rate charged must be in harmony with the tariff, and it cannot be varied by contract or by mistake, for such rate, until changed by the Commission, is a part of the law. It was therefore not only the right but the duty of the railroad to collect the additional five cents a ton.—Cleveland C. C. & St. L. vs. Alexandria Paper Co., (Ind.) 124 N. E. 402.

Dedication of Track—Use of Terminal Facilities by Competing Line

The Louisiana Railway & Navigation Company has a rule that it will not accept, over its connection, carload shipments to be switched for delivery on its recognized public or team track, or to its freight warehouse, or to other sidings or switchings within the yard limits, where a warehouse or receiving depot of the consignee has no facilities for unloading freight direct from car to the warehouse, without the use of drays. This rule seems to be general among common carriers, and, according to the Louisiana Supreme Court, clearly shows that the railroad did not hold its team and industrial track open to the indiscriminate use of the general public, but reserved it for its own use and the service of the industries located thereon. In the face of this rule and of the testimony of officers and agents of an engineering company desiring to use the track, it could not be contended, in mandamus proceedings, that a few exceptional cases of emergency or mistake could constitute in any legitimate sense, a dedication of the track to public use. It is also held that the engineering company could not ship rock over another railroad and decline to use its ample terminal facilities because it was more convenient to use those of the defendant, a competing railroad, at destination, and when refused such use of terminal facilities by the defendant, compel the defendant's surrender of such facilities by mandamus.—Miller Eng. Co. vs. La. Ry. & Nav. Co. (La.) 81 So. 314.

Foreign Railway News

New Railway to Moscow

LONDON.

Under the terms of the peace treaty between Soviet Russia and Esthonia, the latter country is to receive a concession for the construction of a railway between Moscow and the Esthonian frontier.

Electrification on Orleans Railroad

LONDON.

The Orleans Railway of France, says the Times (London) Trade Supplement, is contemplating the electrification of about one-third of its entire system, and a concession for the necessary water power has been applied for. Twenty years will possibly be necessary for the completion of the project.

English Freight Cars

LONDON.

Replying to a question asked in the British Parliament, a representative of the government said recently that the number of railway-owned wagons returned from France in December and January was 2,279. The number of wagons for the building of which arrangements had been made by the railway companies was about 32,000, of which 15,000 were orders placed with outside firms.

Cost of England's Railway Strike

LONDON.

What the general railway strike last year cost the companies or the British Government, says the Engineer (London), may be gaged by the fact that the Ministry of Transport statement shows that while September had a balance of £1,096,410 in revenue over expenditure, October had a balance of £924,987 in expenditure over revenue. These figures suggest that the loss was at last £2,000,000. Strike pay cost the National Union of Railwaymen £206,955, and war loan stock to the value of £260,000 had to be sold.

Ministry of Transport Library

LONDON.

The Ministry of Transport is intending to form a library, which it is hoped to make as representative as possible of all branches of transportation and their developments, as well as of power, trade, industry, agriculture, and other subjects which have an important bearing upon or are affected by transport. Transport in other countries will be fully represented in the collection. The library will form part of the intelligence service of the Ministry, which is now in course of organization under the director general of development, and whose function it will be to keep the ministry informed of all developments in connection with transport, both at home and in other countries.

The Italian Transport Problem

LONDON.

The Times Trade Supplement says that in order to relieve the serious traffic congestion which is having a disastrous effect upon industry in Italy, the Minister of Transport has authorized the employment of additional labor, so that freight trains may be unloaded by continuous shifts working the whole 24 hours. There has also been granted a substantial bonus for the rapid handling of merchandise and shipment of military stores by rail has been suspended. Eleven cargo boats have been allotted by the government for the coastwise trade, and large quantities of bulky products will be carried by them as long as the present difficulties of rail transport continue.

The annual deficit of the railways is estimated at £32,000,000, and to grant the demands now put forward by the railway workers would involve an annual deficit of £80,000,000, which would have to be met by additional taxation, since the freight and passenger rates are now so high, that they cannot be raised without detriment to the country's productive activities.

British Railway Wagon Detention

LONDON.

The Ministry of Transport has published the freight car detention statistics for the month of December, which after allowing for the free periods, was 365,533, as against 340,787 in September. Converted into a tonnage basis the figures are stated to represent a loss in carrying capacity of nearly 500,000 tons in one month. There was a slight improvement in the release of cars at private sidings, but detentions elsewhere rose by 20 per cent. It may be pointed out that the increase takes no account, as far as can be ascertained, of the increased number of cars which it is assumed were in service in December. It is hoped, however, that the increased charges now in operation will put some check upon undue detention.

Report on Electrification of Jamaican Railway

LONDON.

The Times Trade Supplement is authority for the statement that an exhaustive report has been received by the Government of Jamaica from an expert of the Westinghouse Electrical International Company on the proposal to electrify the railways, and to provide current for other industrial purposes. The estimated cost of electrifying the railway, including the required power station, equipment and transmission lines to supply other proposed plants and industries, is as follows:

Power plants	$849,320
Sub-stations	333,320
Motive power—electric locomotives and motorcars—net (cost of new less sale of old motive power)	357,650
Total	$3,393,590

The saving in the cost of operation would be approximately $265,600 a year, which is 7.82 per cent of the cost of electrification.

Railway Construction in China

LONDON.

An abstract from the Times Trade Supplement states that since the outbreak of war in 1914, practically all railway construction work in China has been suspended. The railway problem is very much mixed up with finance, because the only system in vogue has been to advance certain loans to the Chinese Government for the construction of railways under definite stipulations, one of which was the nomination of the engineer-in-chief. The proposal at present is for the international consortium (which includes British, Americans, French and Japanese, and divides all loans advanced to the Chinese Government in equal shares), to deal with the Chinese railways. The Japanese, however, appear to desire to exclude Manchuria from this arrangement. If the Japanese had agreed that all railway construction in Chinese territory should be done by the Chinese Government and financed in equal proportions by the four powers, there would have been a great deal of work carried out by this time.

Dr. Sun Yet, in 1912, resigned his position as president of the new republic in order to prepare a scheme for the nationalization of the railways, but he has never got much beyond the paper stage. He has been advocating recently the international development of China and less than a year ago he wrote, "all the commercial nations are looking for the future market of China as the only dumping ground for their over-production." At that time he advocated the development of a communication system, including 100,000 miles of railways, and new roads, canals, harbors, etc.

The construction of the lines now projected in China will mean great imports in the shape of materials. If the rate of construction runs into 600 miles per year, it has been estimated that the annual expenditure would be over $35,000,000.

To give some idea of the success of Chinese railways, it can be said that in 1915 the Peking-Mukden railway paid 17 per cent, on the capital cost of the line, and taking together all the railways of China in 1915, 8 per cent on total capital expenditure was paid. These figures are still more remarkable when the peculiar methods of Chinese administration and "friend pidgin" are remembered, and there can be no doubt at all that a most profitable way of investing capital in China is by building railways. At present the whole business is hung up, apparently for political reasons, and it does not seem remarkable that the Japanese should take up their present attitude and be able to suspend all construction in China.

Equipment and Supplies

200 Russian Locomotives For Sale

The director of sales of the War Department announces that the 200 decapod locomotives originally built for the Russian government, which have been leased by the Railroad Administration, are to be sold by informal bids and negotiations. Bids are to be received at the office of the chief of engineers, Room 2707, Munitions building, Washington, until 3:00 p. m., March 10.

Locomotives

THE CENTRAL ZAZA (Cuba) has ordered 1 2-8-0 type locomotive from the Baldwin Locomotive Works.

THE CENTRAL ESTRELLA (Cuba) has ordered 1 2-6-2 locomotive from the Baldwin Locomotive Works.

THE FORT SMITH & WESTERN has ordered 2 Mikado type locomotives from the Baldwin Locomotive Works.

THE CANADIAN NATIONAL RAILWAYS have ordered 20 0-6-0 type locomotives from the Canadian Locomotive Works.

THE CHICAGO, MILWAUKEE & ST. PAUL is having repairs made to 10 locomotives at the shops of the Baldwin Locomotive Works.

THE ATLANTIC COAST LINE is having repairs made to 30 4-6-0 type locomotives at the shops of the Baldwin Locomotive Works.

THE LONG ISLAND is having repairs made to 1 4-4-2 type and 3 4-6-0 type locomotives at the shops of the Baldwin Locomotive Works.

THE UNITED FRUIT COMPANY has ordered 5 four-wheel general utility locomotives from the Bell Locomotive Works for use on its lines in Honduras.

THE PAMPANGA SUGAR DEVELOPMENT COMPANY, San Fernando, Philippine Islands, has ordered 2 four-wheel general utility locomotives from the Bell Locomotive Works.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for one standard gage, 36-ton Heisler geared locomotive for southern delivery.

THE EUREKA NEVADA is inquiring for 2 36-in. gage Consolidation type locomotives with 15 by 18 in. cylinders. One locomotive of this type has been ordered from the Porter Locomotive Company.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for 1 six-wheel 70-ton switching engine having boiler with butt joint or butt strapped construction.

THE CHICAGO, ROCK ISLAND & PACIFIC reported in the *Railway Age* of January 23 as about to inquire for a number of locomotives, is inquiring for 10 Mountain type, 10 Pacific type and 15 Santa Fe type locomotives.

THE NEW YORK CENTRAL is inquiring for 50 Mountain type and 10 Pacific type locomotives. This company is also having repairs made to 3 2-8-0 type locomotives at the Brooks Works of the American Locomotive Company.

THE ALLEGHENY RIVER MINING COMPANY has ordered 2 Atlantic type locomotives from the American Locomotive Company. These locomotives will have 19 by 26 in. cylinders and a total weight in working order of 173,000 lb.

THE SOLVAY PROCESS COMPANY, Syracuse, N. Y., has ordered 2 eight-wheel switching locomotives from the American Locomotive Company. These locomotives will have 22 by 28 in. cylinders and a total weight in working order of 208,000 lb.

THE U. S. RAILROAD ADMINISTRATION has ordered 20 Santa Fe type locomotives for the Boston & Maine from the American Locomotive Company. These locomotives will have 29 by 32 in. cylinders and a total weight in working order of 360,000 lb.

Standard Locomotive Deliveries—Week Ended February 21

Three U. S. R. A. 8-wheel switching locomotives were delivered by the Lima Locomotive Works during the week ended February 21 to the Michigan Central.

Freight Cars

JOHN H. HEALD & CO., Lynchburg, Va., is inquiring for 5, 8,000-gal. tank cars.

THE CLARK CAR COMPANY is having 250 extension side dump cars built by the Cambria Steel Company.

THE KOPPERS COMPANY, Pittsburgh, Pa., is inquiring for four, 40-ton hopper gondolas and one, 40-ton flat car.

THE GRASELLI COMPANY, Cleveland, Ohio, is inquiring for from 25 to 50 acid tank cars of 7,000-gal. capacity.

THE A. B. C. TRANSIT REFRIGERATION COMPANY, Chicago, is inquiring for four refrigerator cars for export to Peru.

THE UNION PACIFIC has ordered 45 eight-wheel caboose cars from the Pacific Car & Foundry Company. These cars will be equipped with Bettendorf steel underframes.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for 2, second-hand, double truck standard gage steel underframe caboose cars.

THE GRAND TRUNK, reported in the *Railway Age* of February 6, as being in the market for 3,000 automobile cars and 1,000 flat cars, is now asking for an additional 1,000 50-ton flat cars.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for 2 second-hand side dump, all steel cars, capable of dumping contents either side of track, of 30 to 40 ft. in length.

THE CANADIAN NATIONAL RAILWAYS has placed orders for stock, refrigerator and box cars. The National Steel Car Corporation has been given orders for 1,500 40-ton box cars, the Canadian Car & Foundry Company for 1,000 cars and the Eastern Car Company for 500 cars.

Passenger Cars

THE UNION PACIFIC is inquiring for 65 chair and baggage cars.

THE NEW YORK MUNICIPAL RAILWAY is in the market for 100 subway cars.

THE MAINE CENTRAL is inquiring for 8 baggage and 2 baggage and mail cars.

THE INTERSTATE RAILROAD COMPANY, Philadelphia, Pa., is inquiring for one steel passenger car.

THE CHICAGO, ROCK ISLAND & PACIFIC is inquiring for 10 chair cars, 30 coaches and 22 baggage cars.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for 3 second-hand standard gage parlor cars.

THE NEW YORK CENTRAL is inquiring for 30 electric multiple unit motor cars for suburban service. This inquiry is in addition to other inquiries for through line passenger equipment.

THE ERIE RAILROAD, reported in the *Railway Age* of January 16, as inquiring for 40 passenger train cars, has ordered 42 steel suburban coaches and 6 steel suburban combination cars from the Standard Steel Car Company.

Miscellaneous

JOSE CAMPRUBI, 111 Broadway, New York, has ordered 20,000 boiler tubes from the United States Steel Corporation and is inquiring for 150,000 additional boiler tubes, also for 150 tons of saturated oil and 600 tons of Mazout lubricating oil for export to Spain.

Supply Trade News

R. D. Eves, assistant to the signal engineer of the Nashville, Chattanooga & St. Louis, with headquarters at Nashville, Tenn., has resigned to become railroad sales manager of the Cincinnati (Ohio) office of the **Western Electric Company,** New York.

L. G. Stowell, an assistant engineer in the engineering department of the Chicago, Milwaukee & St. Paul, with headquarters at Chicago, has resigned to become sales engineer of the **Carter Bloxonend Flooring Company,** Kansas City, Mo., and the March & Truman Lumber Company, Chicago, with headquarters at the latter city.

Duncan W. Fraser, managing director of the Montreal Locomotive Works, Ltd., has been elected vice-president in charge of sales of the **American Locomotive Company** and the **Montreal Locomotive Works, Ltd.,** with headquarters at New York, succeeding **J. D. Sawyer,** who has resigned to become vice-president of the banking firm of **Morton & Co., Inc.**

P. G. Pendorf, salesman for the Buda Company, Harvey, Ill., with headquarters at Chicago, has been appointed service engineer for the **National Carbon Company, Inc.,** Cleveland, O., with office at Chicago. Mr. Pendorf was born at State Bridge, N. Y., on September 19, 1881, and began signal work with the Hall Signal Company as a laborer, installing signals. In October, 1898, he was appointed a wireman on a block signal installation on the Illinois Central, and in 1903 he was promoted to block-signal maintainer, with office at Wickliffe, Ky. In April, 1904, he was transferred to Gilman, Ill., and was later appointed a repair man on electric interlocking plants. In May, 1910, he was appointed a signal construction foreman with the General Railway Switch & Signal Company. He remained in this position until 1911, when he was appointed signal supervisor on the Illinois Central, with headquarters at Carbondale, Ill. He has been associated with the Buda Company as a salesman since 1918.

P. G. Pendorf

H. G. Cook, formerly general storekeeper of the Southern Pacific Company, San Francisco, has entered the railway supply business and opened offices in San Francisco, Cal., representing the following companies on the Pacific Coast: Union Asbestos & Rubber Manufacturing Company, Dearborn Chemical Company, Chicago Railway Equipment Company, Bradford Draft Gear Company, Pyle National Headlight Company, National Waste Company.

The leather belting plant and business of the **Edward R. Ladew Company, Inc.,** Glen Cove, N. Y., has been bought by the **Graton & Knight Manufacturing Company,** Worcester, Mass., oak leather tanners and makers of leather belting. The operations of the Ladew organization will be continued as heretofore by the new owners. The plant of the Ladew Company comprises 10 modern buildings, with a floor area of 14 acres, and employs more than 600 persons. The company has branches in Boston, New York, Newark, Philadelphia, Charlotte, Pittsburgh, Cleveland and Chicago and distributors in all principal cities.

At the annual meeting of the **Pratt & Letchworth Company,** Buffalo, N. Y., on March 2, changes were made in the officers of the company as follows: **John C. Bradley,** who for a number of years has been president of the company, was elected chairman of the board of directors; **John H. Bradley,** general manager, was elected president and general manager; **Franklin D. Locke,** vice-president, was elected first vice-president; **John P. Williams,** who has been manager of sales, was elected second vice-president in charge of sales, and **Willis M. Edwards** was re-elected secretary and treasurer.

Government Loses Suit Against Steel Corporation

The United States Supreme Court in a decision handed down on Monday, March 1, dismissed the government's suit for the dissolution of the United States Steel Corporation, affirming the previous action of the lower court. The vote of the court was 4 to 3. Chief Justice White and Justices McKenna, Holmes and Vandevanter concurred in the majority opinion. Justices Pitney, Day and Clarke dissented and Justices McReynolds and Brandeis took no part in the decision. The majority opinion read by Justice McKenna held in effect that the Steel Corporation had committed no overt act violative of the Sherman Anti-Trust law since the government's suit was filed, that, although by its size and its control of equipment and resources in the steel business the corporation was in a dominating position, it had not been able to nor had attempted to prevent competition, and also that to order the dissolution of the corporation would involve the risk of great disturbance in the financial, commercial and economic structure and thus would menace the public interest. The court also dismissed proceedings against individual officers and directors of the company that had been made defendants.

"We are unable to see," said the majority decision, "that the public interest will be served by yielding to the contention of the government respecting the dissolution of the company or the separation from it of some of its subsidiaries, and we do see in a contrary conclusion a risk of injury to the public interest including a material disturbance of, and it may be a serious detriment to, the foreign trade. And in submission to the policy of the law and its fortifying prohibitions the public interest is of paramount regard."

The government's suit was filed against the Steel Corporation and certain other companies which it directs and controls by reason of the ownership of their stock, it and they being separately and collectively charged as violators of the Sherman Anti-Trust act, and it was prayed that it and they be dissolved because engaged in illegal restraint of trade and the exercise of monopoly. In the majority opinion Justice McKenna points out that the judges of the district court uanimously concurred in the view that the corporation did not achieve monopoly and said that such was the deduction of the Supreme Court, and it is against monopoly that the statute is directed; not against the expectation of it, but against its realization, and it is certain that it was not realized. The opposing conditions, the opinion said, were underestimated. The power attained was much greater than that possessed by any one competitor; it was not greater than that possessed by all of them. Monopoly, therefore, was not achieved and competitors had to be persuaded by pools, associations, trade meetings and through the social forms of dinners, all of them, it may be, violations of the law, but transient in their purposes and effect. They were scattered through the years from 1901 until 1911, but after instances of success and failure, were abandoned nine months before the suit was brought. There was no evidence that the abandonment was in prophecy of or dread of suit and the illegal practices have not been resumed nor is there any evidence of an intention to resume them. It is the conclusion of the court, as it was of the judges below, that the practices were abandoned from a conviction of their futility, from the operation of forces that were not understood or

were underestimated, and the government need not fear their resumption. There was some testimony tending to show that the corporation has some monopolistic power because it is greater in size and productive power than any of its competitors, but its power over prices was not and is not commensurate with its power to produce. There was also testimony tending to show that the corporation had not monopolistic power and the conflict was unanimously resolved by the judges of the district court against the existence of that power.

"It is certain," the court says, "that no such power was exerted. On the contrary, the only attempt at fixation of prices was through an appeal to a confederation with competitors and the record shows besides that when competition occurred it was not in pretence and the corporation declined in productive powers. If against the competition we have an instance of movement against what the government insists was an irresistible force, if in consequence of competition we have an illustration of the adage that competition is the life of trade and is not easily repressed, the power of monopoly in the corporation under either is an untenable accusation."

The minority opinion of Justice Day, concurred in by Justices Pitney and Clarke, said that it inevitably follows that the corporation violated the law in its formation and by its immediate practices. "The power thus obtained from the combination of resources almost unlimited in the aggregation of competing organizations had within its control the domination of the trade and the ability to fix prices and restraining the free flow of commerce upon a scale heretofore unapproached in the history of corporate organization in this country. These facts established, it follows that if the Sherman act is to be given efficacy there must be a decree undoing so far as possible that which has been achieved in open, notorious and continued violation of the provisions."

W. A. Trubee

L. J. Drake

W. J. Walsh

Galena Signal Oil Elects New Officers

At the annual meeting of the **Galena Signal Oil Company**, Franklin, Pa., on February 24, a stockholders' advisory committee was created. **J. S. Cullinan,** who was president, **John B. Dennis** and **Frederick Strauss,** become members of the new committee. The directors re-elected are: **L. J. Drake, L. F. Jordan, J. French Miller, E. V. Sedgwick,** and in addition **J. E. Linahen,** vice-president at Franklin, Pa., **W. A. Trubee,** vice-president at New York and **H. S. Skinner,** manager of the export department at New York, have been also elected directors. The changes among the officers include the election of **L. J. Drake** as president, to succeed Mr. Cullinan, **W. A. Trubee,** who was district manager at New York, has been elected vice-president, and **W. J. Walsh,** district manager at Chicago, has been elected vice-president, all with the same headquarters as formerly. **L. F. Jordon** remains as vice-president at New York and **J. E. Linahen** as vice-president at Franklin; **J. French Miller** as secretary-treasurer at Franklin, **L. E. Stull** assistant secretary and assistant treasurer at Franklin, and **C. W. Hochette** assistant secretary and assistant treasurer at New York.

Lauren J. Drake, the new president, with headquarters at New York, was born on August 27, 1880, at Keokuk, Iowa. He was educated in the public schools of Omaha and Chicago, and in 1899 graduated from Shattuck Military School, Faribault, Minn. After leaving school he entered the oil business and acquired a general knowledge of it in all departments during his service of five years with several companies. In 1905 he went to the Galena Signal Oil Company and remained as a representative of that company in the Middle West, until 1916, when he came to New York as vice-president of the same company, and now succeeds **J. S. Cullinan** as president.

W. A. Trubee, who has been elected a vice-president and director, with headquarters at New York, was born in Bridgeport, Conn., on March 22, 1867. He received his early education in Bridgeport private schools, and later attended Greylock Institute at South Williamstown, Mass. He entered the service of the Galena-Signal Oil Company on February 1, 1898, as sales representative at Bridgeport, Conn. On May 1, 1912, he was transferred from Bridgeport to the New York office, and on March 1, 1919, was appointed district manager at New York, which position he held until his recent election as vice-president and director of the same company.

American Locomotive Company

The lack of orders for locomotives for the railroads of this country and the difficulties of the foreign exchange situation are clearly reflected in a decrease of over 50 per cent in the gross earnings of the American Locomotive Company for the six months ended December 31, 1919, as compared with the first six months of 1919. Gross earnings for the second half of the year totaled $20,630,084, as compared with $49,443,498 in the first half. The manufacturing profit for the second six months totaled $3,097,896, as compared with $8,859,867 in the earlier half of the year, while the available profit of $2,577,170 for the six months ended December 31 compared with a similar figure of $5,417,099 in the first half year. The profit earned on the common stock after payment of the preferred dividends figured out at $1,702,171 or $6.81 a share in the period ended December 31, as compared with $6,042,099 or $24.17 a share in the period ended June 30.

The reason for the report's covering only a six month's period is explained as being due to a decision by the board of directors in May, 1919, to make the company's fiscal year conform with the calendar year, instead of ending at June 30 as heretofore.

Andrew Fletcher, president of the company, in explaining the operations of the company for the six months period,

shows how the business of the company was kept at a low figure for lack of domestic business. He strikes a very optimistic note, however, as to the outlook. Although the company operated at only 29.2 per cent of capacity during the six months period and at only 12.5 per cent in November, it had received between December 31 and February 28 $12,800,000 of new business, of which about 84 per cent was for domestic roads.

Mr. Fletcher's remarks follow in part:

"The business of the company for the six months ended December 31, 1919, as was anticipated by the management, was of low volume, due to practically a complete absence of orders from our domestic railways. The orders taken were largely from foreign railways and were both on a cash and deferred credit payment basis. A larger volume of foreign orders on a deferred credit basis could have been taken, but the securitise offered were of a character that in our opinion represented unusual commercial risks and were therefore declined.

"The plants averaged for the six months' period but 20.2 per cent tonnage production of their rated capacity and for the month of November, 1919, but 12.5 per cent of capacity.

"The amount of inventories of materials and supplies on hand and work in progress December 31, 1919, was $7,170,805, as compared with $10,860,483 on June 30, 1919.

"The excess of current assets over current liabilities on December 31, 1919, was $35,686,011. Of this amount approximately $6,000,000 was invested in United States and Canadian Government Bonds and $25,800,000 was invested in United States Treasury Certificates. The company thereby received an income on its inactive working capital and was in a position to convert the securities promptly into cash if acceptable business requiring extension of credit was offered.

"The unfilled orders on December 31, 1919, amounted to $7,862,157, of which about 27 per cent was domestic business and 73 per cent was foreign business, as compared with unfilled orders on June 30, 1919, of $16,034,678, of which about 50 per cent was domestic business and 50 per cent foreign business. Since December 31, 1919, approximately $12,800,000 of new business has been obtained, of which about 84 per cent is for domestic roads and 16 per cent is for foreign trade.

"We have been receiving a fair amount of business from the Far East and the Pan-American countries and believe they will continue to order.

"A large share of our inquiries are from European countries undergoing reconstruction because of the war and whose present financial resources are such as to necessitate deferred credit payments. In some cases the inquiries have been based on an exchange and barter basis. Until those governments and their finances have become more stabilized the business accepted from them, absorbing, as it would, considerable of our working capital, should be restricted to conservative financial risks, for in all probability a very large proportion of our working capital will be required in the near future for our domestic business. A much greater proportion of working capital to unit production of locomotives, we have found, is absolutely necessary now in comparison with the requirements existing before the world war, because of the great increase in costs of labor and materials and in fact everything pertaining to the operation of our plants.

"The prospects for immediate domestic business are being assured by recent orders received and inquiries for prices. The unquestioned shortage and lack of effective motive power of some of the railroads of the country have been known for months, and while some of the rumored requirements are no doubt exaggerated, we are optimistic at least for a fair volume of orders for new locomotives and for the reconditioning of old ones for the year 1920.

"The return of the railroads to corporate control and operation, the adjustment of their financial affairs and the competition for business, will no doubt stimulate the efficiency and progressiveness of this country's railroad executives and operators, and in the refining of operating costs we anticipate there will be a greater demand for well built, effective and economical operating locomotives."

The condensed income account of the American Locomotive Company, Montreal Locomotive Works, Limited, and American Locomotive Sales Corporation, combined, follows:

	6 mos. ended Dec. 31, 1919	6 mos. ended June 30, 1919	12 mos. ended Dec. 31, 1919
Gross earnings	$20,630,084	$49,443,498	$70,073,582
Mnfg., main. and adm. exp. and dep.	17,582,188	40,583,631	58,115,820
Mnfg. profit	$3,097,896	$8,859,867	$11,957,762
Interest, etc.	59,326	168,863	228,189
	$3,038,570	$8,691,004	$11,729,573
Deduct for U. S. and Can. taxes	461,399	1,773,905	2,235,304
Available profit	$2,577,170	$6,917,099	$9,494,269
Divs. on pref. stock	875,000	875,000	1,750,000
Divs. on com. stock	750,000	625,000	1,375,000
Surplus	$952,170	$5,417,099	$6,369,269
Reserve for add. and bet.	.....	4,000,000	4,000,000
Net credit to p. & l.	$952,170	$1,417,099	$2,369,269

Obituary

Houston Lowe, president of the **Lowe Brothers Company,** Dayton, Ohio, died at Miami, Fla., on February 13.

Nathaniel French, manager of the **French & Hecht Company,** Davenport, Ia., and formerly a member of board of trustees of the Chicago, Rock Island & Pacific, died recently at Tuscon, Ariz., at the age of 65 years.

William White, formerly president of and, since his retirement from active business about one year ago, chairman of the board of directors of the National Boiler Washing Company, Chicago, died at his home in Niles, Mich., February 28 at the age of 57 years.

Trade Publications

POWER HAMMERS.—A belt-driven and a motor-driven power hammer are described in a 16-page booklet published by Beaudry & Co., Inc., Boston, Mass. Both types are manufactured in various sizes and are described in detail, with tables showing sizes and dimensions. All the individual parts are illustrated and numbered for convenience when ordering.

VISE FOR PNEUMATIC DRILLS.—A four-page circular has been issued by the Independent Pneumatic Tool Company, Chicago, describing a new universal vise for pneumatic drills, the purpose of which is to firmly clamp and hold the drill in accessible positions while repairs, assembling and testing are done. Illustrations show the detail parts of the vise and how to use it.

THE PRATT BALLAST CLEANER.—The Link Belt Company, Chicago, has recently issued a four-page illustrated folder containing a description of the Pratt ballast cleaner. The illustrations show the ballast cleaner in operation and the text of the bulletin describes the principle of the machine and its operation, including some statistical data on its capacity.

CONSTITUTION OF THE UNITED STATES.—The Clark Equipment Company, Buchanan, Mich., has published an attractive booklet containing a reproduction of the Constitution of the United States and all amendments. It is illustrated with pen portraits of notable American Presidents, by W. M. Young. This is a booklet which every American would be glad to have and will be mailed on request.

FURNACE BURNERS.—Bulletin No. 119 of the Hauck Manufacturing Company, Brooklyn, N. Y., describes in detail the many different types of oil burners manufactured by this company and illustrates practical applications of the burners to various types of furnaces. In addition, a number of sketches are included suggesting other ways of applying Hauck burners and throughout the book are given results of tests, prices and service data.

PORTABLE MACHINE TOOLS.—The Pedrick Tool & Machine Company, Philadelphia, Pa., has issued a comprehensive, well-illustrated catalogue of 96 pages, describing the special machine tools manufactured by the company for use in railway shops, shipyards and general machine shops. Among the tools of special interest to railroad men may be mentioned the portable cylinder boring bar, column boring bar, duplex horizontal boring machine, portable crank pin turning machine, locomotive pedestal jaw facer and pipe bending machine.

Financial and Construction

Railway Financial News

CHICAGO & EASTERN ILLINOIS.—This company has sold its central Illinois coal properties to the Illinois & Indiana Coal Corporation for approximately $2,935,000.

NEW YORK CENTRAL.—The New York Public Service Commission, Second District, has authorized an issue of $14,848,100 6 per cent equipment notes to reimburse the government for equipment purchased.

GRAND TRUNK.—At a meeting in London on February 19, the shareholders agreed to turn over the property, including the line in the United States, to the Canadian government. The terms of the agreement are given in an article elsewhere in this issue.

NEW YORK, PHILADELPHIA & NORFOLK.—W. W. Atterbury has been elected a director to succeed W. Heyward Myers, retired.

NORFOLK & WESTERN.—Childs Frick and E. H. Alden have been elected directors to succeed William G. Macdowell, retired, and Henry C. Frick, deceased.

PALATINE, LAKE ZURICH & WAUCONDA.—This railroad is not in the hands of receivers and should not have been included in the list of receiverships published in the *Railway Age* of January 2, 1920. The company was incorporated in June, 1918, and on July 13, 1918, purchased the property of the Waukegan, Rockford & Elgin Traction Company, at a court sale.

PENNSYLVANIA.—Andrew W. Mellon, of Pittsburgh, has been elected a director to succeed Henry C. Frick, deceased.

PITTSBURGH, CINCINNATI, CHICAGO & ST. LOUIS.—W. W. Atterbury, George D. Dixon and Henry Tatnall have been elected directors to succeed Edward B. Taylor, D. T. McCabe and Benjamin M. Keen, retired.

WEST JERSEY & SEASHORE.—M. C Kennedy has been elected a director to succeed W. Heyward Myers, retired.

PHILADELPHIA'S BUSINESS.—It is Philadelphia's business to see that her railroads are protected and encouraged to fully develop their facilities in this district. Our needs are pressing and our congressmen should be instructed to see that the railroads are not only given protection, but sufficient revenue to care for our requirements. Today, on the Pennsylvania alone, 3,000 cars averaging loads of 40 tons move in and out of Philadelphia. The products of Philadelphia industry are received through 89 freight handling points of the Pennsylvania, 62 on the Philadelphia & Reading and eight on the Baltimore & Ohio. Through the Penn- carried 28,000,000 more. Philadelphia's commercial development sylvania's 32 passenger stations in Philadelphia 46,919,000 passengers travelled last year. The Reading and the Baltimore & Ohio is dependent on the condition of its railroads. In Overbrook (six miles out) there is a freight yard project that will increase the handling capacity of the Pennsylvania by 3,500 cars. In South Philadelphia a projected rearrangement of the freight lines will give quicker access to the piers and foreign trade. Both projects are held up by lack of funds. The tax on business as a result of railroad congestion and embargoes cannot be computed. New capital is needed now and public confidence in the future earning power of the railroads is necessary to attract this capital. This bank has no railroad account, but we have the accounts of many business houses that need modern railroad service. Help the railroads to help Philadelphia.—From an appeal published in the daily press by the Corn Exchange National Bank of Philadelphia.

Railway Officers

Executive

M. C. Byers, prior to federal control assistant to president of the Western Maryland and more recently federal manager, has been elected president and federal manager.

H. W. Stanley, general superintendent of the Tennessee Central under federal control, has been appointed receiver for the company, with headquarters at Nashville, Tenn.

Thomas F. Brennan, during the period of government control federal manager of the Buffalo, Rochester & Pittsburgh, has been reelected vice-president of the same road with headquarters at Rochester, N. Y., effective March 1.

W. R. Scott, prior to federal control vice-president and general manager of the Southern Pacific and vice-president of the Northwestern Pacific, with headquarters at San Francisco, Cal., has been elected president of the Southern Pacific, Louisiana & Texas lines, succeeding W. B. Scott.

W. J. Jackson, prior to federal control receiver for the Chicago & Eastern Illinois, with headquarters at Chicago, and now federal manager, has been reappointed receiver with the same headquarters, effective on March 1, succeeding **T. D. Heed,** now receiver and president, who becomes financial assistant to the former.

Charles H. Stein, whose appointment as assistant to the president of the Central of New Jersey, effective at the termination of federal control, was announced in the *Railway Age* of February 27 (page 661), was born in 1871 at Baltimore, Md., and educated in the Baltimore City College. He began railroad work in December 7, 1889, as rodman with the Western Maryland, and from that time until 1893 was respectively transitman and assistant engineer on preliminary surveys and construction. From 1893 until May, 1903, he was assistant roadmaster of the same road and from then until June, 1905, was assistant supervisor of the Philadelphia & Reading at Reading, Pa., becoming supervisor in June, 1905. He entered the service of the Central of New Jersey about two years later, as engineer of maintenance of way, and held that position until appointed superintendent of that road in February, 1914. In 1918 he became assistant general manager of the same road and of the Philadelphia & Reading, with headquarters at Philadelphia, which positions he held at the time of his recent appointment.

C. H. Stein

Financial, Legal and Accounting

Thornwell Fay, assistant to the receiver of the International & Great Northern, has been given the new title of executive officer for receiver.

J. A. Edson, federal manager of the Kansas City Southern, with headquarters at Kansas City, Mo., has been elected president, with the same headquarters, succeeding **L. F.**

Loree, who has resigned. Mr. Edson was president prior to government control.

Benjamin T. Wood, assistant to the federal manager of the St. Louis-San Francisco, with headquarters at St. Louis, Mo., who has been elected fifth vice-president and chief purchasing officer of the St. Louis-San Francisco, was born at Springfield, Mo., on December 31, 1878. He entered railway service in 1897 as a stenographer in the division superintendent's office of the Kansas City, Ft. Scott & Memphis. In January, 1899, he was appointed secretary to the general superintendent of the same road, and in 1902 was made secretary to the vice-president and general manager. In 1904 he was appointed secretary to the third vice-president of the Chicago, Rock Island & Pacific and later became secretary to the president of the same road. From January, 1905, to December, 1909, he was chief clerk to the president of the same road and from the latter date until May, 1911, he was chief clerk to the president of the Chicago & Eastern Illinois. In May, 1911, he was appointed assistant to the vice-president of the St. Louis-San Francisco, remaining in that position until November, 1913, when he was appointed assistant to the vice-president in charge of operation. In 1916 he was appointed assistant to the president of the same road. The following year he was also elected vice-president of the Birmingham Belt, and in July, 1918, he was appointed assistant to the federal manager of the Missouri, Kansas & Texas and the St. Louis-San Francisco, which position he held until the reorganizing of these roads in the Southwestern region, after which he retained jurisdiction over the latter road.

B. T. Wood

George W. Hand, corporate chief engineer of the Chicago & North Western and the Chicago, St. Paul, Minneapolis & Omaha, with office at Chicago, has been promoted to assistant to the president of the Chicago & North Western, with the same headquarters, effective March 1. Mr. Hand was born at Huntertown, Ind., in 1882, and was educated at Purdue University, Lafayette, Ind. He entered railway service in March, 1903, with the Chicago & North Western, as a tapeman and continued in the employ of that road up to the time of his recent appointment. During the first four years of his railroad service, he was employed as a tapeman, rodman and instrument man on location and construction work, and on surveys. From 1907 to 1910 he was assistant engineer on track elevation work, following which he was transferred to the chief engineer's office and assigned to special duties, which included making specific investigations, studying standards and conducting state valuation work. When the federal valuation law was passed he was assigned exclusively to valuation work and was subsequently appointed valuation engineer and a member of the valuation committee of the North Western and of the Chicago, St. Paul, Minneapolis & Omaha. He continued in these capacities until November, 1918, when he was appointed corporate chief engineer of the Chicago & North Western and the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at Chicago. Mr. Hand continued in these positions until his recent appointment.

G. W. Hand

A. D. Chambers, secretary and treasurer of the Delaware, Lackawanna & Western and **J. G. Enderlin,** assistant secretray and assistant treasurer of the same road, have retired. Mr. Chambers has been in the employ of the company continuously for 51 years and Mr. Scofield continuously for 48 years.

William B. Bancker and **Benjamin A. Van Tassel,** assistant treasurers of the Erie under the Railroad Administration, will continue in the same positions under private control. Other assistant treasurers of the Erie have been appointed as follows: **Sylvester Z. Earle, George H. Smith** and **Harry W. Trumpler.**

Bryan Thomas, prior to federal control secretary and auditor of the Toledo Terminal, with headquarters at Toledo, and now secretary and auditor of the same road and auditor and assistant secretary of the Detroit & Toledo Short Line, has been appointed auditor of the latter road with headquarters at Detroit, Mich.

Operating

C. B. Sexton has been appointed assistant general manager of the Eureka Nevada, with headquarters at Palisade, Nev.

Lysle H. White, whose appointment as general manager of the Boyne City, Gaylord & Alpena, with headquarters at Boyne City, Mich., was announced in the *Railway Age* of February 13, (page 516), was born at Boyne City, Mich., on January 19, 1887. He received his education at the University of Michigan, Ann Arbor, Mich., and entered railway service in 1910 with the Boyne City, Gaylord & Alpena as a car distributor. The following year he was promoted to assistant superintendent and after serving in this capacity for two years he was appointed superintendent. In 1918 he was appointed general superintendent of the same road, which position he held until his recent promotion. As general manager he succeeds **F. O. Barden,** who was elected vice-president, as announced in the *Railway Age* of February 13, (page 516).

L. H. White

J. T. Waddell, trainmaster of the Tennessee Central at Nashville, Tenn., has been appointed superintendent, with the same headquarters.

F. W. Brown has been appointed assistant to the general manager of the Atlantic Coast Line, with headquarters at Wilmington, N. C., effective March 1.

M. Nicholson, assistant general manager on the Chicago, Milwaukee & St. Paul, Lines East, with office at Chicago, has been promoted to general manager of the Lines West, with headquarters at Seattle, Wash., a newly created position. **C. O. Bradshaw,** general superintendent, with office at

Milwaukee, Wis., has been promoted to succeed **M. Nicholson,** and **W. J. Thiele,** superintendent of the River and the Iowa and Minnesota divisions, with headquarters at Minneapolis, Minn., has been promoted to succeed Mr. Bradshaw at Milwaukee. **D. E. Rossiter,** superintendent of the La Crosse division, with headquarters at Portage, Wis., had been transferred to the River and the Iowa and Minnesota divisions, succeeding Mr. Thiele. **D. W. Kelly,** trainmaster at Green Bay, Wis., has been promoted to succeed Mr. Rossiter at Portage.

J. L. Wilkes, superintendent of Washington, D. C., Terminals during the period of federal control, with headquarters at Washington, has been appointed general manager of the Jacksonville Terminal, with headquarters at Jacksonville, Fla., effective March 1. Mr. Wilkes was born on a farm near Columbia, Maury County, Ill., on October 3, 1880. He began railroad work in 1896 as a telegraph operator on the Nashville division of the Louisville & Nashville, later being promoted to train despatcher. In 1905 he entered the employ of the Illinois Central as a despatcher and later as chief train despatcher of the Louisville division, until 1917, when he temporarily left railroad service to become general manager of the Bell-Union Coal & Mining Company, with mines in Union County, Ky. Shortly after he resumed railroad work as assistant superintendent of the Atlanta division of the Nashville, Chattanooga & St. Louis, with headquarters in Atlanta, Ga. He filled that position until August 1, 1918, when he was appointed to the staff of the regional director of the Allegheny region as supervisor, operating division at Philadelphia. On February 1 of the following year he was transferred to Washington, D. C., as superintendent of Washington Terminals, which included the freight facilities of the Baltimore & Ohio and the Pennsylvania and the Union Station Terminal properties within the District of Columbia.

J. L. Wilkes

The headquarters of **W. M. Weidenhamer,** general superintendent of the Southern district of the Chicago, Milwaukee & St. Paul, have been transferred from Chicago to Savanna, Ill.

D. F. Kirkland, general manager of the Georgia & Florida under the Railroad Administration, has been appointed general manager for the receivers, with headquarters at Augusta, Ga., effective March 1.

Mott Sawyer, assistant general superintendent on the Chicago, Milwaukee & St. Paul, with headquarters at Seattle, Wash., has been transferred to the Northern district, with headquarters at Minneapolis, Minn.

W. D. Trump, terminal manager at Detroit, Mich., for the Eastern region of the United States Railroad Administration, has been appointed general manager of the Detroit Terminal, the position he held prior to government control.

Elliott E. Nash, assistant to the federal manager of the Chicago & North Western, with headquarters at Chicago, has been appointed general manager of the Minneapolis & St. Louis, with headquarters at Minneapolis, Minn., effective March 1. Mr. Nash was born at Hudson, Wis., on March 28, 1870. He entered railway service in June, 1886, with the Chicago, St. Paul, Minneapolis & Omaha, and served in various capacities with this road until 1888, when he became a clerk in the Hudson (Wis.), station of the same road. Subsequently he served consecutively as a clerk in the auditor's office at St. Paul, Minn., from 1889 to 1891; as traveling auditor, with the same headquarters, during 1891; as agent at Ashland, Wis., from 1892 to 1898; as agent at St. Paul, during 1898; as agent at Minneapolis, Minn., from 1899 to 1905, and as assistant superintendent at Itasca, Wis., and Eau Claire, from 1905 to 1910. In the latter years he was assigned to special work in the president's office of the Chicago & North Western at Chicago. In 1911 he was appointed superintendent of the Minnesota division of the North Western, with headquarters at Winona, Minn., serving in this capacity until April, 1912, when he was transferred to the Madison division, with headquarters at Baraboo, Wis. In November, 1913, he was promoted to assistant general superintendent of the lines east of the Missouri river, excepting the Iowa, Minnesota and Dakota divisions, with headquarters at Chicago. Mr. Nash continued in this capacity until October, 1917, when he was transferred to Boone, Ia. Soon after the organization of the United States Railroad Administration he was appointed assistant to the federal manager of the Chicago & North Western, which position he held until his recent appointment.

C. S. Krick, assistant general manager of the Pennsylvania Railroad, who has been promoted to general manager of the Eastern region, with headquarters at Philadelphia, as announced in the *Railway Age* of February 20 (page 598), was born at Reading, Pa., on March 16, 1866, and graduated from Lafayette College in 1887. Shortly after graduating he entered railway service as a rodman on the Pennsylvania, since which he has been consecutively rodman, assistant supervisor and supervisor, until January 1, 1903, when he was promoted to assistant engineer. In 1906 he was promoted to principal assistant engineer and in 1907 to division superintendent, remaining in that capacity until May, 1916, when he was promoted to general superintendent of the New Jersey division. In 1918 he was promoted to assistant general manager, which position he held until his recent appointment.

C. S. Krick

Traffic

R. Van Ummersen, general freight agent of the Boston & Albany, has been promoted to freight traffic manager, with headquarters at Boston, Mass., effective March 1.

J. G. Simmons, prior to federal control general traffic manager of the Cincinnati, Indianapolis & Western, has been reappointed to that position, effective March 1.

Lester R. Knapp has been appointed division freight agent of the New York division of the Erie, effective March 1; **Frank D. Hartnett** has been appointed division freight agent of the side lines, and **Frank A. Waldron,** division passenger agent.

S. M. Adsit, general freight and passenger agent of the Virginian, has been promoted to traffic manager, and **W. S. Saunders,** assistant general freight agent, to general freight agent. **L. W. Woody** has been appointed assistant general passenger agent. The headquarters of all are at Norfolk, Va. **H. C. Mitchell** has been appointed general agent of the Virginian, with headquarters at Pittsburgh, Pa.; **R. A. Yelton**

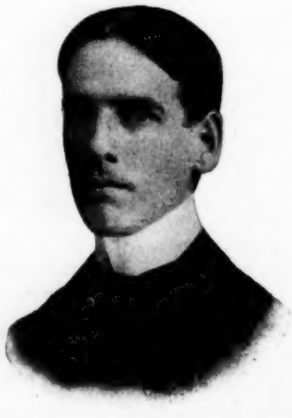
has been appointed general agent, with headquarters at Cincinnati, Ohio.

Peter H. Woodward, secretary to the federal manager of the Long Island, who has been appointed general passenger agent with headquarters at New York succeeding H. M. Smith, deceased, was born at Allegan, Mich., on November 28, 1873, and educated in the public schools of Alma, Mich. He began railroad work in 1890 as stenographer and clerk in the car record office of the Flint & Pere Marquette, now the Pere Marquette. The following year he was transferred to the office of the general superintendent of the same road, acting in various clerical capacities until March 20, 1897. About that time, shortly after W. H. Baldwin, Jr., and W. F. Potter left the Pere Marquette to go to the Long Island, the former as president and the latter as general superintendent, Mr. Woodward came east to become clerk to the general superintendent. Later he was promoted to chief clerk and served in that capacity until May 1, 1903, when he was appointed superintendent of express. About two years later, when Mr. Potter became president of the Long Island, Mr. Woodward was promoted to secretary to the president, retaining the same position when Ralph Peters succeeded Mr. Potter as president. During federal control Mr. Woodward held the title of secretary to the federal manager.

Peter H. Woodward

Engineering, Maintenance of Way and Signaling

William J. Foster, who has been appointed regional engineer of the Hornell region of the Erie Railroad, with headquarters at Hornell, N. Y., as announced in the *Railway Age* of February 27 (page 661), was born in July, 1876, at Honesdale, Pa., and is a graduate of the Middletown (N. Y.) Academy. Mr. Foster entered the service of the Erie Railroad in July, 1893, and with the exception of one year has served on that road continuously. From 1893 to 1898 he served as chainman, rodman, transitman, track supervisor's and master carpenter's clerk on the Buffalo division, being appointed engineer in charge in the construction department under C. W. Buckholz, chief engineer, in 1898. In 1904, he became assistant division engineer of the Susquehanna division and the following year he left the Erie Railroad to become superintendent of the John H. Parker Company, general building contractors in New York City. In 1906, he returned to the Erie as assistant to engineer of grade crossings upon the establishment of that office. From 1908 to 1912 he was resident engineer in charge of construction in the grade crossing department and for the following four years was district engineer in charge of second track and grade reduction work on the Chicago & Erie division. In 1916 he was appointed engineer of grade crossings, with headquarters at New York, and two years later was appointed assistant superintendent of construction, also at New York, from which position he was promoted to regional engineer, as noted above.



W. J. Foster

W. C. Cushing, chief engineer maintenance of way of the Pennsylvania Lines West, who has been appointed engineer of standards and valuation of the system, with headquarters at Philadelphia, Pa., as announced in the *Railway Age* of February 20 (page 598), was born at St. John, New Brunswick, on March 18, 1863. After graduating from the University of New Brunswick and the Massachusetts Institute of Technology, he entered railway service in 1887 with the Pennsylvania as a rodman in the engineering corps. On January 27, 1889, he was promoted to engineer maintenance of way of the Cincinnati & Muskingum Valley, where he remained a year before becoming division engineer of the Indianapolis division in 1890. On June 1, 1894, he was transferred to the Pittsburgh division as division engineer, being promoted to superintendent of this division in 1901. He was later transferred to the Eastern division in 1902, and on January 1, 1903, was made chief engineer maintenance of way of the Southwest system, remaining in this position until he was appointed chief engineer maintenance of way of the Lines West in July, 1918.

W. C. Cushing

James M. Coble has been appointed shop superintendent of the Buffalo, Rochester & Pittsburgh at Rikers, Pa., succeeding **W. W. Scott,** resigned.

J. C. Patterson, principal assistant engineer of the Erie, who has been promoted to regional engineer, New York region, with headquarters at Jersey City, N. J., as announced in the *Railway Age* of February 27 (page 660), was born at Carmichaels, Pa., in 1882 and graduated from Pennsylvania State College in 1905. He entered railway service with the Pennsylvania Railroad in the same year, where he served until August, 1906, when he entered the employ of the New York Central. He remained with that road until April, 1907, when he went with the Cleveland, Cincinnati, Chicago & St. Louis. From October, 1907, to April, 1909, he was employed by John C. O'Bryan, consulting engineer, returning to railway service with the Northern Pacific on the latter date, where he remained until October, 1909, when he entered the employ of the Chicago Great Western. In July, 1913, he became chief draftsman on the Erie and in May, 1916, was promoted to assistant valuation engineer. He was made office engineer in February, 1917, remaining

J. C. Patterson

in that position until July, 1918, when he was promoted to principal assistant engineer, which position he held until receiving his recent appointment.

Walter J. Towne, during the period of federal control assistant general manager of the Chicago & North Western, with headquarters at Chicago, has been appointed engineer maintenance of way, with the same headquarters, effective March 1. Mr. Towne was born at Leavenworth, Kan., on November 28, 1867, and entered railway service in 1886 as a rodman in an engineering party on the Atchison, Topeka & Santa Fe. He was subsequently instrument man and assistant engineer on the same road. He left railway service in 1891 to attend Rensselaer Polytechnic Institute, Troy, N. Y., from which he was graduated in 1896. He then became assistant engineer on the New York State Canals, which position he held until February 14, 1899, when he returned to railway service as an assistant engineer of construction on the Chicago & North Western, with headquarters at Boone, Iowa. He served in this capacity until 1900 when he was promoted to assistant engineer at Kaukauna, Wis., and in 1901 he was transferred to Escanaba, Mich. In 1902 he was promoted to division engineer, with headquarters at Baraboo, Wis., and served in the same capacity from July to October, 1904, at Escanaba, and from October, 1904 to 1906, at Chicago. From March, 1906, to July of the same year, he served as engineer of permanent improvements. On the latter date he was appointed engineer maintenance of way, in which position he continued until April, 1912, when he was appointed general superintendent, with headquarters at Chicago. On May 13, 1914, he was promoted to assistant general manager with the same headquarters, and remained in that position until his recent appointment as engineer maintenance of way.

E. A. Hadley, who during government control, was engineering assistant to the director of the Southwestern region of the United States Railroad Administration, with office at St. Louis, Mo., has been appointed chief engineer of the Missouri Pacific, with the same headquarters, the position he held prior to government control. **H. R. Carpenter,** who during Mr. Hadley's service with the government has been chief engineer, has resumed the position he held prior to government control as assistant chief engineer in charge of construction. **R. C. White,** who during government control has been assistant chief engineer, has been appointed assistant chief engineer in charge of maintenance.

General

ANN ARBOR

The following officers have been appointed on the Ann Arbor, in addition to the appointments noted in the *Railway Age* of February 27, page 658:

C. H. Cox	Assistant treasurer	Toledo, Ohio
A. L. Smith	General solicitor	" "
H. S. Bradley	Traffic manager	" "
C. Z. Hughes	Purchasing agent	" "
T. H. Hervey	Supt. car service	" "
L. L. Shepard	Freight claim agent	" "
C. S. Reifsnider	Chief of police	" "
A. Syverson	Superintendent	Owosso, Mich.
L. J. Allen	Chief engineer	" "
J. E. Osmer	Supt. mot. power & car dept.	" "
M. B. Nesmith	General claim agent	" "
R. H. Reynolds	Marine superintendent	Frankfort, Mich.

ATCHISON, TOPEKA & SANTA FE

The following officers have been appointed on the Atchison, Topeka & Santa Fe, effective on March 1:

Executive and Financial Departments

W. B. Storey	President	Chicago.
Edw. Chambers	Vice-pres. charge traffic	"
A. G. Wells	Vice-pres. charge operation	"
W. E. Hodges	Vice-president	Los Angeles, Cal.
E. J. Engel	Vice-president	Chicago.
E. L. Copeland	Secretary and treasurer	Topeka, Kan.
L. C Deming	Assistant secretary	New York
C. W. Cooper	Treasurer	" "
G. Holterhoff, Jr.	Asst. treas. and asst. sec.	Los Angeles, Cal.

Legal Department

S. T. Bledsoe	General counsel	Chicago.
Gardiner Lathrop	General solicitor	"

Accounting Department

D. L. Gallup	Controller	New York
W. E. Bailey	General auditor	Chicago.

Purchasing Department

M. J. Collins	General purchasing agent	Chicago.

Engineering Department

C. F. W. Felt	Chief engineer	Chicago.

Simultaneously it was announced that other officers who have been in the service of the United States Railroad Administration will resume their former positions.

BALTIMORE & OHIO

The organization of the Baltimore & Ohio, effective on its return to private control is as follows:

Executive Department

Daniel Willard	President	Baltimore
Geo. M. Shriver	Vice-pres., acct., treasury, claim and relief depts.	"
F. C. Batchelder	Vice-pres., exec. rep.	Chicago
C. W. Galloway	V.-pres., op'ration & maint.	Baltimore
Archibald Fries	Vice-president, traffic	"
J. S. Murray	Assistant to president	"
Geo. H. Campbell.	" "	"

Financial, Legal and Accounting Departments

C. W. Woolford	Secretary	Baltimore
Geo. F. May	Assistant secretary	"
H. L. Bond, Jr.	General counsel	"
H. R. Preston	General solicitor	"
Morison R. Waite.	" "	Cincinnati, O.
C. W. Egan	General claim agent	Baltimore
F. J. Griffith	Tax agent	"
J. J. Ekin	Controller	"
W. D. Owens	Assistant controller	"
F. A. Deverell	" "	"
J. P. O'Malley	" "	"
C. C. Glessner	Freight claim agent	"
E. M. Devereux	Treasurer	"
R. B. Luckey	Asst. treas. & transfer agt.	New York
T. H. Schultz	Assistant treasurer	Baltimore
J. Q. McComas	" "	"
W. J. Dudley	Supt., relief department	"
W. M. Kennedy	Asst. supt., relief dept.	"
C. H. Moran	Real estate agent	"

Engineering Department

A. O. Cunn'gham	Chief engineer	St. Louis, Mo.
R. H. Howard	Chief engr., main. of way	" "
E. F. Needham	Supt. of motive power	Decatur, Ill.
T. J. Frier	Purchasing agent	St. Louis, Mo.

Purchasing and Stores Department

W. S. Galloway	Purchasing agent	Baltimore
E. A. Foos	Fuel agent	"
H. P. McQuilkin	General storekeeper	"

Engineering Department

L. G. Curtis	Chief engineer, adjust. div.	"
Jenks B. Jenkins	Valuation engineer	"
H. A. Lane	Chief engr. of construction	"
Earl Stimson	Chief engr. of maintenance	"
F. P. Patenall	Signal engineer	"

Mechanical Department

Geo. H. Emerson	Chief of mot. pow. & equip.	"
J. T. Carroll	General supt., mot. power	"
J. J. Tatum	Supt., car department	"
J. R. Onderdonk	Engineer of tests	"

Operating Department

W. G. Curran	Gen'l supt., transportation	Baltimore
G. F. Malone	Supt. of car service	"
C. A. Plumly	Superintendent, telegraph	"
J. H. Clark	Supt., floating equipment	New York
S. Ennes	Gen'l manager, east'n lines	Baltimore
R. N. Begien	Gen'l manager, west'n lines	Cincinnati, O.
H. B. Voorhees	Gen. mgr., N. Y. term. lines	New York
E. W. Scheer	Gen'l supt., Maryland dist.	Baltimore
J. F. Keegan	Gen'l supt., Penna. dist.	Pittsburgh
J. M. Scott	Gen'l supt., W. Va. dist.	Wheeling W. Va.
E. A. Peck	Gen'l supt., N'thwest dist.	Cleveland, O.
F. B. Mitchell	Gen'l supt., S'thwest dist.	Cincinnati, O.

TRAFFIC DEPARTMENT

Golder Shumate..	Freight traf. mgr., east. reg.	Baltimore
O. A. Constans...	Frt. traf. mgr., n'thwest reg.	Chicago
H. R. Lewis.....	Frt. traf. mgr., s'thwest reg.	Cincinnati, O.
Stuart A. Allen..	Asst. freight traffic mgr....	New York
C. S. Wight.....	Gen'l freight representative.	"
H. O. Hartzell...	Mgr., commercial dev'l'pm't.	"
H. M. Matthews..	Coal traffic manager.....	"
H. A. Cochran...	Asst. coal traffic manager..	"
T. J. Walters....	Gen'l coal freight agent....	"
F. J. Couse.....	Foreign freight agent.....	"
R. A. Ebe.....	General live stock agent....	"
W. F. Richardson.	General freight agent.....	Baltimore
O. S. Lewis.....	" " "	Pittsburgh, Pa.
H. H. Marsh.....	" " "	Wheeling, W. Va.
P. D. Freer.....	" " "	Cincinnati, O.
Geo. M. Kridler..	" " "	Chicago
Edward Hart....	" " "	St. Louis, Mo.
W. B. Calloway..	Passenger traffic manager..	Baltimore
O. P. McCarty...	Asst. to pass. traf. manager.	"
W. E. Lowes.....	General passenger agent....	"
G. W. Squiggins..	" " "	Cincinnati, O.
W. G. Brown....	" " "	Chicago
B. N. Austin.....	Western pass. repr'sentative.	"
E. V. Baugh.....	Superintendent, dining cars.	Baltimore
J. C. McCahan, Jr.	Mgr., mail and expr. traffic.	"

BANGOR & AROOSTOOK

The following is the organization of the Bangor & Aroostook, effective upon its return to private control:

J. H. Hammond..	Chairman executive committee.
Percy R. Todd...	President.
Frank C. Wright.	Vice-president.
Wingate F. Cram.	Treas and clerk, also in charge of real estate, insurance and taxes.
F. A. W. Field...	Assistant treasurer.
M. S. C. Baker...	Assistant clerk.
H. P. Burns.....	Acting general auditor.
C. D. Baldwin....	Purchasing agent.
R. H. MacCready.	Assistant to president.
W. K. Hallett....	General manager.
Henry J. Hart....	General counsel.
M. Burpee	Chief engineer.
P. C. Newbegin...	Maintenance engineer.
H. Shoemaker....	Mechanical superintendent.
J. P. Darling.....	Superintendent Northern Division.
J. B. McMann....	Superintendent Southern Division.
F. H. Daggett....	Superintendent car service.
G. E. Wicks.....	General freight agent.
G M. Houghton..	General passenger agent.
E. W. Peterson...	General storekeeper.
E. F. Curtis.....	Freight claim agent.

The executive offices of the Bangor & Aroostook are at Bangor, Me.

BOSTON & ALBANY

The staff organization of the New York Central Lines was given in last week's issue, page 659. The following is the organization of the Boston & Albany, as announced by H. M. Biscoe, vice-president in charge of that property:

G. H. Fernald, Jr..	Counsel	Boston
E. L. Rossiter....	Treasurer	New York
Adam Haug	Auditor	Boston
J. L. Truden.....	General superintendent ...	"
F. B. Freeman....	Chief engineer	"
R. D. Smith.....	Supt. mot. pwr. & roll. st...	"
W. E. Adams....	Special asst. to vice-pres...	"
R. Van Ummersen.	Freight traffic mgr.....	"
W. A. Barrows...	General passenger agent...	"
F. A. Ryer.....	Purchasing agent	"
F. S. Austin.....	General storekeeper	"

CAROLINA, CLINCHFIELD & OHIO

The following is the organization of Carolina, Clinchfield & Ohio on its return to private control:

John B. Dennis...	Chairman of the board....	New York
Mark W. Potter..	President	"
J. J. Campion....	Vice-president, traffic.....	Johns'n City, Tenn.
I. McQuilkin.....	Vice-pres., finances & accts.	" "
Edward C. Bailly.	Secretary	New York
John W. Sanders.	Treasurer	Johns'n City, Tenn.
H. G. Morrison..	General solicitor.....	" "
L. H. Phetteplace.	General manager.....	Erwin, Tenn.
O. K. Morgan....	Chief engineer.....	Johns'n City, Tenn.
W. A. Starritt....	Purchasing agent.....	" "
D. C. Boy.....	Industrial representative...	" "

CENTRAL OF GEORGIA

The following is a portion of the organization of the Central of Georgia, effective with its return to private control:

Wm. A. Winburn.	President	Savannah, Ga.
Alex. R. Lawton..	Vice-president	"
L. A. Downs.....	Vice-pres. & genl. mgr....	"
T. Cunningham Jr.	General counsel	"
H. Wiley Johnson.	Asst. genl. counsel.....	"
John D. Little....	" " "	Atlanta, Ga.
A. R. Lawton, Jr.	Solicitor	Savannah, Ga.
W. B. McKinstry.	Controller	"
W. C. Askew....	Treasurer	"
H. V. Jenkins....	Asst. treasurer	"

Charles T. Airey, vice-president and general manager of the Central of Georgia, announces the following as the new organization of the traffic department of that road:

N. B. Wright....	Asst. freight traffic mgr....	Savannah, Ga.
F. D. McConnell.	General freight agent.....	" "
W. McN. Knapp.	Asst. general freight agent.	" "
T. L. Collings...	Asst. general freight agent.	Macon, Ga.
F. E. Ellis.....	Division freight agent.....	Atlanta, Ga.
W. C. Kilgore...	Div. freight and pass. agent.	Augusta, Ga.
W E. Stewart...	Div. freight and pass. agent.	C'ttanooga, Tenn.
R. C. Brookes...	Division freight agent.....	Savannah, Ga.
J. M. Mallory...	Industrial agent	" "
J. F. Jackson....	Agricultural agent	" "

Traffic Representatives

J. S. Harris.....	Commercial agent.....	Albany, Ga.
B. R. Bloodworth.	Commercial agent.....	Athens, Ga.
A. S. Thompson..	Commercial agent.....	Atlanta, Ga.
F. F. Powers.....	Commercial agent.....	Augusta, Ga.
———	Commercial agent.....	Baltimore, Md.
E. F. Stovall.....	General agent	Birmingham, Ala.
E. B. Lewis.....	Commercial agent.....	" "
B. H. DaCosta...	New England agent.....	Boston, Mass.
D.W.Vaughan, Jr.	Commercial agent.....	Chicago.
J. W. Jones.....	Commercial agent.....	Cincinnati, Ohio.
T. P. Wade.....	Commercial agent.....	Columbus, Ga.
F. L. Corwin....	Florida freight agent.....	Jacksonville, Fla.
J. R. Randolph...	Commercial agent.....	" "
H. A. Fletcher...	Commercial agent.....	Kansas City, Mo.
F. M. Tuttle.....	Commercial agent.....	Macon, Ga.
S. L. Peeples.....	Commercial agent.....	Memphis, Tenn.
M. C. Stokes.....	General agent.....	Montgomery, Ala.
Redin Bryan, Jr..	Contracting freight agent..	" "
C. H. Stringe....	Commercial agent.....	Nashville, Tenn.
Henry R. McLean.	Eastern traffic agent.....	New York, N. Y.
F. D. Robinson...	Commercial agent.....	Okla. City, Okla.
Alan Browning...	Commercial agent.....	Philadelphia, Pa.
W. J. Siegel.....	Commercial agent.....	St. Louis, Mo.
W. A. Winburn, Jr.	Commercial agent.....	Savannah, Ga.
B. L. Abberger...	Commercial agent.....	Tampa, Fla.

CHARLESTON & WESTERN CAROLINA

The organization of the Charleston & Western Carolina, effective on its return to private control, is announced as follows:

H. Walters.....	Chairman of the board....	New York
Geo. B. Elliott....	Chairman, executive com...	Wilmington, N. C.
F. B. Grier.....	President	Greenwood, S. C.
J. R. Kenly.....	First vice-president.....	Wilmington, N. C.
A. W. Anderson..	2nd vice-pres. & gen'l mgr..	Augusta, Ga.
John T. Reid.....	Treasurer	Wilmington, N. C.
W. C. Yarbor'gh.	Assistant treasurer.....	" "
R. D. Cronly.....	Secretary	" "
R. A. Brand.....	Freight traffic manager.....	" "
W. J. Craig.....	Passenger traffic manager..	" "
H. C. Prince.....	General auditor.....	" "
F. M. Doar.....	General superintendent.....	Augusta, Ga.
W. F. Kuhlke....	Supt., motive power.....	" "
A. H. Porter.....	Engineer of roadway.....	" "
W. L. Humphrey.	Supt., car service.....	" "

CHESAPEAKE & OHIO

A portion of the organization of the Chesapeake & Ohio was given in last week's issue, page 658. Other appointments are as follows:

E. P. Goodwin...	Asst. to general manager..	Richmond, Va.
E. W. Grice.....	Mgr., pur., stores & safety..	"
W. L. Booth.....	Supt. transportation	"

(Chesapeake & Ohio, Continued)

A. T. Lowmaster. Asst. supt. transportation..Richmond, Va.
J. R. Gould.....Supt. motive power..... "
C. H. Terrell....Asst. supt. motive power.. "
F. I. Cabell.....Chief engineer ..... "
L. B. Allen.....Supt. maintenance of way..Huntington, W.Va.
C. W. Bradley....Supt. telegraph .....Richmond, Va.
J. R. Cary.....Genl. Supt., East. Genl. div.Clifton Forge, Va.
E. L. Bock.....Genl. Supt., West. Genl. div.Huntington, W.Va.
G. J. Derbyshire..Genl. Supt., C. & O. Ry. Co.Peru, Ind
B. T. Jellison.....Genl. purchasing agent.....Richmond, Va.
R. M. Nelson....Purchasing agent ..... "
M. S. McDonald. Superintendent, stores.....Huntington, W.Va.
R. L. Morris.....General storekeeper..... "
W. T. Oppenhimer. Chief surgeon .....Richmond, Va.
J. W. King.....Chief special agent..... "
J. R. Evans.....Chief fuel supervisor..... "
C. E. Bolton.....Statistician ..... "

CHICAGO, INDIANAPOLIS & LOUISVILLE

The following officers have been appointed on the Chicago, Indianapolis & Louisville, effective on March 1:

EXECUTIVE AND FINANCIAL DEPARTMENTS

H. R. Kurrie.....President .....Chicago.
Fred Zimmerman. Vice-president ..... "
F. S. Wynn.....Secretary .....New York
Byron Cassell ....Treasurer .....Chicago.

OPERATING DEPARTMENT

H. C. May.....General manager.....Lafayette, Ind.
W. H. Fogg.....General superintendent..... " "
F. E. Lewis.....Superintendent ..... " "
J. R. Stemm.....Superintendent ..... " "

ACCOUNTING DEPARTMENT

H. T. Evans.....Auditor .....Chicago.

PURCHASING DEPARTMENT

J. H. Libenthal...Purchasing agent .....Chicago.

TRAFFIC DEPARTMENT

E. P. Veronia....General freight agent.....Chicago.
E. P. Cockrell....General passenger agent... "

ENGINEERING DEPARTMENT

A. S. Kent.....Chief engineer .....Chicago.
Anton Anderson..Engr. maintenance of way..Lafayette, Ind.

CHICAGO, MILWAUKEE & ST. PAUL

The executive personnel of the Chicago, Milwaukee & St. Paul has been announced as follows:

H. E. Byram.....President .....Chicago
B. B. Greer.....Vice-pres., charge op'ration. "
R. M. Calkins....Vice-pres., charge traffic... "
H. B. Earling.....Vice-president .....Seattle, Wash.
E. D. Sewall.....Vice-president .....Chicago
C. B. Ferry.....Vice-pres. and asst. sec'y...New York
G. J. Bunting.....Controller .....Chicago
Burton Hanson...General counsel..... "
H. H. Field.....General solicitor..... "
A. G. Loomis.....Treasurer ..... "
John Dickie.....Assistant treasurer..... "
J. McNab..... " " ..... "
F. B. Simpson....Asst. treas., asst. sec., tr. agt.New York
R. J. Marony..... " " " "
E. W. Adams.....Secretary .....Milwaukee, Wis.
H. M. Sloane.....Asst. to the president.....Chicago
J. W. Taylor..... " " " ..... "
D. L. Bush.....Asst. to the vice-president.. "
G. F. Loweth.....Chief engineer..... "
W. W. K. Sparrow Assistant chief engineer.... "
A. G. Hagensick..Assistant secretary.....Milwaukee, Wis.
F. Lethenstrom...Auditor .....Chicago

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA

Following a meeting of the board of directors of the Chicago, St. Paul, Minneapolis & Omaha held recently, the official organization of the road, effective on March 1, was announced as follows:

EXECUTIVE AND FINANCIAL DEPARTMENTS

Marvin Hughitt..Chairman, board of dir.....Chicago
James T. Clark...President .....St. Paul, Minn.
Samuel A. Lynde. Vice-president .....New York
A. W. Trenholm. Vice-president .....St. Paul, Minn.
John D. Caldwell. Secretary .....Chicago
Arthur S. Pierce. Treasurer .....New York
Charles P. Nash..Local treasurer .....St. Paul, Minn.
T. W. Arundel..Asst. treas. and asst. sec...New York
Harry W. Rush..Asst. treas. and asst. sec... " "
Charles A. Leggo. Assistant secretary .....St. Paul, Minn.

LEGAL DEPARTMENT

James B. Sheean. General counsel .....Chicago
R. L. Kennedy....General solicitor .....St. Paul, Minn.
Donald Evans....Attorney ..... " " "
Fred G. Wright..Attorney ..... " " "
Frank Wenter....General claim agent..... " " "
H. R. Grochau...Freight claim agent..... " " "

OPERATING DEPARTMENT

J. J. O'Neill.....Manager .....St. Paul, Minn.
F. R. Pechin.....General superintendent ... " " "
Geo. L. Ossmann. Car service agent..... " " "
Geo. Boyce.....Supt. telegraph and signals. " " "
H. L. McClure...Supt. dining cars.....Minneapolis, Minn.

TRAFFIC DEPARTMENT

Hiram M. Pearce. General traffic manager....St. Paul, Minn.

Freight

A. M. Fenton....General freight agent.....St. Paul, Minn.
L. A. Mizener....Asst. general freight agent. Minneapolis, Minn.
G. C. Wright.....Asst. general freight agent. St. Paul, Minn.

Passenger

G. H. MacRae...General passenger agent...St. Paul, Minn.
E. L. Pardee.....Asst. general passenger agt. " " "
E. F. Woode.....General baggage agent..... " " "

ACCOUNTING DEPARTMENT

Charles Jensch...Controller .....St. Paul, Minn.

ENGINEERING DEPARTMENT

H. E. Barlow....Chief engineer .....St. Paul, Minn.
H. P. Padley....Assistant chief engineer... " " "

LAND, RIGHT OF WAY AND TAX DEPARTMENTS

G. W. Bell.....Land commissioner .....Hudson, Wis.
H. P. Barlow.....R. of way commissioner...St. Paul, Minn.
T. A. Polleys....Tax commissioner .....Chicago
Wm. Mueller.....Asst. tax commissioner....St. Paul, Minn.

MECHANICAL DEPARTMENT

J. O. Enockson...Supt. mot. power & mach..St. Paul, Minn.
W. H. Thorn.....Master car builder.....Hudson, Wis.
G. M. Davidson..Chemist & engr. of tests...Chicago

CHICAGO & NORTH WESTERN

The board of directors of the Chicago & North Western Railway Company recently announced the official organization of the company, effective on March 1, as follows:

EXECUTIVE AND FINANCIAL DEPARTMENTS

Marvin Hughitt..Chairman, board of dir....Chicago.
Wm. H. Finley...President ..... "
Samuel A. Lynde. Vice-pres. and asst. sec....New York City.
M. Hughitt, Jr....V.-P. Charge of operation. Chicago.
H. R. McCullough. V.-P. Charge of traffic.... "
Edw. M. Hyzer..Vice-president ..... "
John D. Caldwell. Secretary and assist. treas. "
Arthur S. Pierce. Treasurer and asst. sec....New York City.
T. W. Arundel...Asst. treas. and assist sec.. " " "
H. W. Rush.....Asst. treas. and assist sec.. " " "
Barret Conway...Assistant secretary.....Chicago.

LEGAL DEPARTMENT

Jas. B. Sheean...General counsel .....Chicago.
A. A. McLaughlin. Asst. general solicitor..... "
Nelson J. Wilcox. Asst. general solicitor..... "
R. H. Widdicombe. Commerce attorney..... "
R. C. Richards...General claim agent..... "
H. C. Howe.....Freight claim agent..... "

OPERATING DEPARTMENT

M. Hughitt, Jr..Vice-president .....Chicago.
Frank Walters ...General manager ..... "
F. H. Hamill.....Asst. G. M. (eastern lines). "
Wm. Walliser ...Asst. G. M. (eastern lines). "

(Chicago & North-Western, Continued)

C. T. Dike.....Asst. G. M. (west. lines)..Omaha, Neb.
G. B. Vilas.....Gen. Supt. (eastern lines).Chicago.
H. E. Dickinson..Gen. Supt. (west. lines)...Omaha, Neb.
Robert Quayle ...Gen. Supt. M. P. & Mach.Chicago.
H. T. Bentley....Supt. of m. p. & mach..... "
T. H. Goodnow..Supt. car department..... "
Geo. M. Davidson.Chemist and engr. of tests. "
F. J. Berck.....General purchasing agent.. "
O. E. Hallberg...Car service agent..... "
Wm. Bennett ....Supt. of Telegraph..... "
C. H. Shircliffe..Sup. dining and parlor cars. "

TRAFFIC DEPARTMENT

H. R. McCullough.Vice-president .....Chicago.
A. C. Johnson....General traffic manager.... "

Freight

H. W. Beyers....Freight traffic manager....Chicago
E. D. Brigham..Asst. freight traffic mgr.... "
A. F. Cleveland...Asst. freight traffic mgr.... "
S. F. Miller.....General freight agent..... "
S. G. Nethercot...Asst. general freight agent. "
S. H. Gillette....Asst. general freight agent. "

Passenger

C. A. Cairns.....Passenger traffic manager..Chicago.
J. L. Ferguson...General passenger agent... "
M. R. Leahy.....Asst. gen. passenger agent. "
Robert Thomson..Asst. gen. passenger agent. "
C. R. Custer.....Asst. gen. passenger agent. "
H. G. Graves.....General baggage agent..... "

ACCOUNTING DEPARTMENT

L. A. Robinson...Comptroller .....Chicago.
C. D. Brandriff...General auditor ..... "
A. B. Jones.....Local treasurer ..... "
C. L. Lowe.....Auditor of expenditures... "

ENGINEERING DEPARTMENT

L. J. Putnam.....Chief engineer.....Chicago.
F. C. Huffman....Principal asst. engineer.... "
W. J. Towne.....Engineer of maintenance... "
O. F. Dalstrom...Engineer of bridges..... "
J. A. Peabody.....Signal engineer ..... "

LAND AND TAX DEPARTMENTS

J. F. Cleveland...Land commissioner .....Chicago.
T. A. Polleys....Tax commissioner..... "

SURGICAL DEPARTMENT

J. E. Owens, M.D.Consulting surgeon.....Chicago.
C. W. Hopkins...Chief surgeon..... "

CINCINNATI, INDIANAPOLIS & WESTERN

The executive staff which now controls the Cincinnati, Indianapolis & Western has been announced, in part, as follows:

F. J. Goebel.....Sec. and assist. counsel....Indianapolis, Ind.
D. J. Curran.....Treasurer ..... " "
L. E. Smith.....Freight claim agent..... " "
F. B. Brown.....Freight claim agent..... " "
M. V. Hynes.....General superintendent..... " "
J. L. Powell.....Supt. of car service..... " "
W. H. Bettcher...Master car builder..... " "
H. F. Passel.....Chief engineer ..... " "
C. F. Shadle.....Efficiency engineer ..... " "
C. G. Slagle.....Acting supt. motive power. " "
J. A. Simmons....General traffic manager.... " "

CUMBERLAND & PENNSYLVANIA

The following is the organization of the Cumberland & Pennsylvania, effective with the return of the property to private control:

C. W. Watson....President .....New York.
Arthur Hale.....Vice-president .....Baltimore, Md.
S. D. Camden....Vice-president .....New York.
A. K. Bowles....Assistant-General Auditor..Baltimore, Md.
T. K. Stuart.....Secretary and treasurer... " "
H. H. Warfield...Asst. sec. and asst. treas.... " "
E T. Dixon.....Auditor .....Cumberland, Md.
J. H. Patten.....General attorney .....Washington, D. C.
A. Taylor Smith..Attorney .....Cumberland, Md.
J. T. Robertson...General manager ..... " "
Wm. Ewald.....Supt. motive power.....Mt. Savage, Md.
W. Claus .....Engr. maintenance of way.Cumberland, Md.
A. T. Watson....General purchasing agent..Fairmont, W. Va.

DULUTH, MISSABE & NORTHERN

The following officers have been appointed on the Duluth, Missabe & Northern, effective on March 1:

EXECUTIVE AND FINANCIAL DEPARTMENTS

W. A. McGonagle.President .....Duluth, Minn.
W. J. Olcott.....First vice-president ..... " "
Pentecost Mitchell.Second vice-president..... " "
C. E. Carlson....Secretary ..... " "
J. M. Sias.....Assistant secretary ..... " "
J. W. Kempton...Treasurer ..... " "
Thomas Murray..Assistant treasurer .....New York
G. A. Flinn.....Railway and tax agent.....Duluth, Minn.

LEGAL DEPARTMENT

F. D. Adams.....General solicitor .....Duluth, Minn.
E. F. Blu.....Asst. general solicitor..... " "

ACCOUNTING DEPARTMENT

Joseph Seifert ...Auditor .....Duluth, Minn.

ENGINEERING DEPARTMENT

W. H. Hoyt.....Chief engineer .....Duluth, Minn.

TRAFFIC DEPARTMENT

C. W. Kieswetter.Traffic manager .....Duluth, Minn.

PURCHASING DEPARTMENT

H. Greenfield.....Purchasing agent .....Duluth, Minn.

OPERATING DEPARTMENT

J. W. Kreitter....Superintendent .....Proctor, Minn.

MECHANICAL DEPARTMENT

C. W. Seddon....Supt. motive power & cars..Proctor, Minn.

DELAWARE, LACKAWANNA & WESTERN

The following gives the details of the organization of the Delaware, Lackawanna & Western, effective on its return to private control:

EXECUTIVE DEPARTMENT

W. H. Truesdale. President .....New York
W. S. Jenney....Vice-pres. & gen. coun.... "
E. M. Rine .....Vice-pres. & general man.. "
J. J. Flynn.....Vice-president; traffic ..... "
W. W Inglis.....V.pres. & man.; min op....Scranton, Pa.
W. Van DeWater.Secretary and treasurer....New York
G. E. Hustis.....Controller ..... "
G. J. Ray.....Chief engineer .....Hoboken, N. J.

LEGAL DEPARTMENT

W. S. Jenney.....V.-pres. & gen. coun.....New York
J. L. Seager .....Assistant gen. counsel.... "
D. Swift .....Gen.. Attorney for N. Y... "
D. R. Reese .....Gen. attorney for Penn....Scranton, Pa.
E. T. Lukens.....Real Estate & Tax Agent..Hoboken, N. J.

OPERATING DEPARTMENT

E. M. Rine .....V.-pres. & general man...New York
H. H. Shepard...General superintendent....Scranton, Pa.
E. B. Moffatt....Asst. to V.-p. & gen. man..New York
R. M. White.....Supt. Morris & Essex div.Hoboken, N. J.
J. J. Pierce.....Asst. supt. M. & E. div... "
F. J. Lawrence...Supt., Scranton div. .....Scranton, Pa.
H. E. Griffith.....Supt. Bangor & Port'nd div.Bangor, Pa.
A. E. Staub.....Supt., Buffalo div.....Buffalo, N. Y.
Frank Cizek .....Supt., Syracuse & Utica div.Binghamton, N.Y.
G. C. Ferris.....Asst. supt., Syr. & Utica div.Syracuse, N. Y.
A. J. Miller.....Supt., car service.....Scranton, Pa.
V. D. Thayer....Car accountant..... "
C. C. Hubbell....Purchasing agent .....New York
I. H. Lance.....Storekeeper ..... Scranton, Pa.
J. M. Emery.....Mgr., marine dept.....Hoboken, N. J.

MECHANICAL DEPARTMENT

H. C. Manchester Supt., mot. pwr. & equip...Scranton, Pa.
J. C. Fritts.....Master car builder..... "
S. S. Riegel.....Mechanical engineer ..... "
T. F. Barton.....Master mechanic .....Kingsland, N. J.
B. H. Davis..... " " " .....Scranton, Pa.
F. C. Pickard.... " " " .....Buffalo, N. Y.
B. E. Miller.....Master Painter .....Kingsland, N. J.
H. J. Force.....Chemist and eng. of tests...Scranton, Pa.

MAINTENANCE OF WAY AND STRUCTURES

G. J. Ray.....Chief engineer .....Hoboken, N. J.
A. J. Neafie.....Principal assist. engineer... "
M. H. Doughty..Division engineer..... "

(Delaware, Lackawanna & Western, Continued)

L. L. Tallyn.....Division Engineer.....Scranton, Pa.
G. E. Boyd..... " " .....Buffalo, N. Y.
F. L. Wheaton... " " .....Binghamton, N.Y.
M. E. Smith.....Signal engineer .....Hoboken, N. J.
H. M. Warren...Electrical engineer .....Scranton, Pa.

TRAFFIC DEPARTMENT

Freight Traffic

P. J. Flynn.....Vice-president .....New York
Nat Duke.....Freight traffic mgr..... "
J. J. Byrne.....Asst. freight traffic mgr.... "
D. T. Lawrence..General freight agent..... "
A. B. Wallace...Asst. general freight agent.. "
C. F. McTague.. " " " " ..Buffalo, N. Y.
Maurice Williams " " " " ..New York
E. S. Giles.....Coal freight agent..... "

Passenger Traffic

G. A. Cullen.....Passenger traffic mgr.....New York
W. F. Griffiths...General passenger agent.... "
E. J. Quackenbush.Asst. genl. passenger agent..Buffalo, N. Y.
G. E. Zippel.....Gen. bag. & milk traf. agt..Hoboken, N. J.
C. P. Barrett.....General w. pass agent....Chicago, Ill.
J. L. Homer.....General e. pass. agent....New York
F. A. Stine.....Supt. din. car & rest service.Hoboken, N. J.
J. G. Bray.....Division passenger agent...Newark, N. J.
M. L. Smith.....Division passenger agent...Scranton, Pa.
J. L. Smith.....Division passenger agent...Binghamton, N. Y.

Industrial

J. F. Muller.....Industrial agent .....New York

TREASURY DEPARTMENT

W. Van De Water.Secretary and treasurer....New York
J. E. Enderlin....Asst. sec. & asst. treas..... "
W. S. Dunloy....Cashier ..... "
F. N. Hallstead..General paymaster .....Scranton, Pa.
G. N. England...Asst. general paymaster.... "

ACCOUNTING DEPARTMENT

G. E. Hustis.....Comptroller .....New York
R. B. Ferguson..General auditor ..... "
R. O. Collins.....Auditor disbursements ..... "
Frank Wildey....Asst. auditor disbursements.. "
J. F. Jeckel.....Auditor miscel. accounts.... "
Miss M. I. Dailey.Registrar of contracts..... "
P. D. Jonas.....Statistician ..... "
Henry Foulkes...Mail traffic agent..... "
Bertram Young...Auditor frt. & ticket accts..Scranton Pa.
J. M. Coddington.Asst. aud. frt. & ticket accts. "
A. B. Thompson..Freight claim agt..... "
W. H. Gaskill....Asst. freight claim agent... "
Frank Hildebrand.Auditor, coal department... "

COAL MINING DEPARTMENT

W. W. Inglis.....Vice-president & manager..Scranton, Pa.
S. D. Dimmick...General superintendent .... "
H. M. Warren...Electrical engineer ..... "
N. N. Nichols....chief engineer ..... "
J. N. Shaw.....Assistant purchasing agent.. "
Thos. Bevan.....Storekeeper ..... "

ELGIN, JOLIET & EASTERN

The organization which will control the Elgin, Joliet & Eastern henceforth has been announced as follows:

S. M. Rogers.....Vice-president .....Chicago
F. L. Koontz.....Secretary and treasurer.... "
E. J. Fay.....Assistant secretary..... "
Edward Beecroft. " treasurer ..... "
K. K. Knapp.....General counsel..... "
R. W. Campbell..General attorney..... "
W. L. Louis.....Traffic manager..... "
P. L. Fisher.....General auditor..... "
C. H. Kenzel.....Purchasing agent..... "
H. M. De Gette...Freight claim agent..... "
P. F. McManus...General superintendent....Joliet, Ill.
A. Montzheimer..Chief engineer..... " "
J. Horrigan.....Supt. motive power..... " "
R. F. Beaudry....Supt. Joliet division..... " "
C. H. Doorley....Supt. Gary division.....Gary, Ind.
A. L. Christiansen.Supt. car service.....Joliet, Ill.
T. E. Bond.....Asst. traffic manager.....Chicago
G. W. Williams...Assistant general auditor.. "
G. G. Davis, M.D.Chief surgeon..... "

EL PASO & SOUTHWESTERN SYSTEM

The following is the organization of the El Paso & Southwestern System, as recently announced:

EXECUTIVE DEPARTMENT

T. M. Schumacher.President .....New York
A. C. James.....Vice-president ..... "
M. J. Curry.....Asst. to president..... "
George Notman...Controller and secretary... "
C. W. Parsons....Asst. secy. and treas..... "

OPERATING DEPARTMENT

A. E. Sweet.....General manager .....El Paso, Tex.
L. U. Morris.....General superintendent .... " "
H. S. Fairbank...Supt., Western div.....Douglas, Ariz.
C. D. Beeth.....Supt., Eastern div.....Tucumcari, N. M.

TRAFFIC DEPARTMENT

Eugene Fox.....General traffic manager....El Paso, Tex.
W. C. Barnes.....General freight agent..... " "
C. E. Hilsabeck...Asst. general freight agent. " "
Garnett King.....General passenger agent... " "
R. S. Trumbull...Agricultural agent ..... " "
H. J. Simmons....General agent ..... " "

LEGAL DEPARTMENT

Wm. C. Osborn..General counsel .....New York
W. A. Hawkins..General attorney .....El Paso, Tex.
W. M. Peticolas..General solicitor ..... " "
D. W. Harrington Asst. general solicitor..... " "
W. S. Dawson....General claim agent..... " "

ACCOUNTING DEPARTMENT

A. L. Hawley....General auditor .....El Paso, Tex.
H. C. Brown.....Asst. general auditor..... " "
Batelle White ...General cashier ..... " "
B. H. Bower.....Car accountant ..... " "

ENGINEERING AND MECHANICAL DEPARTMENTS

Thomas Paxton ..Supt., motive power.....El Paso, Tex.
J. L. Campbell....Chief engineer ..... " "

PURCHASING DEPARTMENT

E. L. Hunter.....Purchasing agent .....El Paso, Tex.

GRAND TRUNK

Howard G. Kelley, president of the Grand Trunk Railway System, announced on February 28 that upon the release of the Grand Trunk Lines in the United States, west of the Detroit and St. Clair rivers and ease of Norton's Mills, Vt., from federal control, the jurisdiction of the executive officers of the system would be extended over such lines. In addition, the following appointments have been made:

GRAND TRUNK LINES IN NEW ENGLAND

J. H. Edward.....Local treasurer.....Portland, Me.
A. E. Plant.....Local auditor..... " "
A. B. McNaught'n.Supt., Portland div..... " "
H. L. Nelson.....Division freight agent..... " "

LINES WEST OF THE DETROIT AND ST. CLAIR RIVERS

Wm. C. Tomkins.Local treasurer.....Detroit, Mich.
Fred Norton.....Auditor ..... " "
H. E. Whittenb'g'r.General manager..... " "
W. H. Sample....Cons. eng., m. p. & car depts. " "

Freight Traffic Department

R. L. Burnap.....Freight traffic manager.....Chicago
E. F. Flinn.....General freight agent..... "
W. H. Spicer.....Asst. gen'l freight agent...Detroit
C. A. Gormaly....Division freight agent.....Chicago
Jas. Cameron.....Chief of tariff bureau..... "
A. Z. Mullins.....Division freight agent.....Grand Rapids
H. W. Ploss.....Commercial agent.....Milwaukee
H. H. Hamill.....General agent.....Detroit

Passenger Traffic Department

J. D. McDonald...General passenger agent....Chicago
C. G. Orttenb'ger.General agent..... "
J. H. Burgis..... " " .....Detroit

GREAT NORTHERN

The following officers have been appointed on the Great Northern, effective on March 1:

EXECUTIVE DEPARTMENT

L. W. Hill.....Chairman of the board.....St. Paul, Minn.
Ralph Budd.....President ..... " " "
G. R. Martin.....V.-p., executive dept. " " "

(Great Northern, Continued)

E. T. Nichols....V.-p. & asst. secretary.....New York
E. C. Lindley.....V.-p. & general counsel.....St. Paul, Minn.
W. P. Kenney....V.-p. & director of traffic.. " " "
C. O. Jenks.....V.-p., operating dept..... " " "
F. L. Paetzold....Secretary & treasurer..... " " "
G. H. Hess, Jr....Controller ..... " " "

FINANCIAL DEPARTMENT

N. Terhune.....Asst. sec. & asst. treas.....New York
R. C. Patterson...Cashier & asst. secretary...St. Paul, Minn.
W. G. Smith.....Paymaster ..... " " "

LEGAL DEPARTMENT

M. L. Countryman.Gen. solicitor—lines east..St. Paul, Minn.
John F. Finerty..Asst. general counsel..... " " "
F. G. Dorety.....Asst. general counsel..... " " "
A. L. Janes.....Asst. general solicitor..... " " "
J. A. Murphy.....Attorney for Wisconsin....Superior, Wis.
C. J. Murphy.....Attorney for N. Dakota....Grand Forks, N. D.
I. P. Veazey, Jr...Attorney for Montana.....Great Falls, Mont.
Aikens & Judge...Attorneys for S. Dakota...Sioux Falls, S. D.
Jepson & Struble..Attorneys for Iowa.....Sioux City, Ia.
Andrew Haydon..Attorney .....Ottawa, Ont.
James Fisher.....Attorney for Manitoba.....Winnipeg, Man.
F. V. Brown.....Gen. solicitor—lines west..Seattle, Wash.
A. H. MacNeill..Atty. for British Columbia.Vancouver, B. C.
C. S. Albert.....Atty. for Idaho & E. Wash..Spokane, Wash.
Thomas Balmer...Atty. for Ore. & W. Wash.Seattle, Wash.
James T. Maher..R. of way, land & tax com.St. Paul, Minn.
John L. Snapp...Right of way & tax agent..Seattle, Wash.
D. H. Kimball....Claims attorney .....St. Paul, Minn.

TRAFFIC DEPARTMENT

G. H. Smitton....Traffic manager .....St. Paul, Minn.
M. J. Costello....Asst. traffic manager.....Seattle, Wash.
C. E. Stone.....General passenger agent...St. Paul, Minn.
E. H. Wilde.....Asst. gen. passenger agent. " " "
A. J. Dickinson...Asst. gen. passenger agent. " " "
H. A. Noble.....Asst. gen. passenger agent. " " "
C. W. Meldrum...Asst. gen. passenger agent.Seattle, Wash.
E. C. Leedy.....Supervisor of agriculture..St. Paul, Minn.
Fred A. Hills.....General baggage agent.....St. Paul, Minn.
W. S. Baskerville. Gen. agent, mail traffic:...St. Paul, Minn.
F. W. Graham....Agricultural agent.....Seattle, Wash.
H. H. Brown.....Assistant traffic manager...St. Paul, Minn.
P. H. Burnham...General freight agent..... " " "
F. H. Parker.....Asst. general freight agent. " " "
P. B. Beidelman..Asst. general freight agent. " " "
W. J. Power.....Asst. general freight agent. " " "
James Robinson...Asst. general freight agent. " " "
S. A. Volkman....Gen. agt., refrigerator serv. " " "

OPERATING DEPARTMENT

C. O. Jenks.....Vice-president .....St. Paul, Minn.
J. A. Cochrane...Asst. to vice-president..... " " "
F. Bell.....Gen. manager—lines east... " " "
J. H. O'Neill.....Gen. manager—lines west..Seattle, Wash.
F. J. Gavin.....Gen. supt. Lake district....Superior, Wis.
P. F. Keating.....Gen. supt. Eastern district.St. Paul, Minn.
W. R. Smith.....Gen. supt. Central district..Great Falls, Mont.
F. S. Elliott.....Gen. supt. Western district.Spokane, Wash.
A. L. Bergfeld....Gen. supt. of transportation.St. Paul, Minn.
F. L. Hay.....Supt. dining & sleeping cars. " " "
J. C. Rankine.....Supt. of telegraph..... " " "
T. F. Dixon.....Supt. Marcus division.....Marcus, Wash.

MECHANICAL DEPARTMENT

William Kelly....Gen. supt. motive power....St. Paul, Minn.
Henry Yoerg.....Supt. mot. power—lines east " " "
J. J. Dowling....Supt. mot. power—lines westSpokane, Wash.
W. R. Wood.....Mechanical engineer .....St. Paul, Minn.
T. E. Cannon.....Gen. mas. mech., Lake dist.Superior, Wis.
M. Flanagan.....Gen. mas. mech., East. dist.St. Paul, Minn.
T. J. Clark.....Gen. mas. mech., West. dist.Spokane, Wash.
A. B. Ford.....Gen. mas. mech., Cent. dist.Great Falls, Mont.

ENGINEERING DEPARTMENT

A. H. Hogeland..Chief engineer .....St. Paul, Minn.
C. M. Nye.....Assistant chief engineer.... " " "
O. S. Bowen.....Assistant chief engineer....Seattle, Wash.
J. R. W. Davis..Engr. maintenance of way..St. Paul, Minn.
H. S. Freeman...Office engineer ..... " " "
J. A. Bohland....Bridge engineer ..... " " "
C. A. Dunham....Signal engineer ..... " " "
G. D. Eddy.....Valuation engineer ..... " " "

PURCHASING DEPARTMENT

F. A. Bushnell....Purchasing agent .....St. Paul, Minn.
F. I. Plechner....Assistant purchasing agent. " " "
A. H. Lillengren..Assistant purchasing agent. " " "
O. H. Wood.....Assistant purchasing agent.Seattle, Wash.
J. F. Pratt.....General storekeeper .....St. Paul, Minn.
Howard Hayes....Asst. general storekeeper.. " " "

ACCOUNTING DEPARTMENT

G. H. Hess, Jr....Controller .....St. Paul, Minn.
J. A. Sandberg....Deputy controller ..... " " "
F. A. Barnes.....Assistant controller ..... " " "
W. Montgomery...Assistant controller ..... " " "
J. H. Boyd.....Assistant controller ..... " " "
V. P. Turnburke..Statistician ..... " " "
J. U. Haley.....Valuation accountant..... " " "
P. Rodenberg.....Tax accountant..... " " "
J. C. Seiberlich...General accountant..... " " "
J. H. Kaufmann...Auditor misc. companies... " " "
J. A. Nelson.....Chief freight claim agent.. " " "
E. C. Lewis.....Freight claim agent..... " " "
W. D. McNamara.Freight claim agent..... " " "
G. L. Seibert.....Freight claim agent.....Seattle, Wash.
W. H. Fortier....Freight claim agent.....Spokane, Wash.
A. B. Fisher.....General auditor.....St. Paul, Minn.
C. W. Tilton.....Assistant general auditor... " " "
G. V. Malmgren.Auditor disbursements..... " " "
E. J. Willis.....Auditor freight receipts.... " " "
L. R. Smith.....Auditor station accounts... " " "
L. A. Malmgren...Auditor passenger receipts. " " "
R. L. Knebel.....Auditor car records..... " " "
H. F. Bayer.....Auditor capital expenditures " " "
F. G. Sprain.....Auditor overcharge claims. " " "
H. J. Sturner.....Accountant train statistics.. " " "
A. R. Simon.....Joint facility accountant... " " "
H. E. Kongsvik...Commissary accountant.... " " "
R. A. Nichols.....Accountant .....Seattle, Wash.

SPECIAL

D. W. Morison...Supt. employment bureau..St. Paul, Minn.
C. L. La FountaineGeneral safety supervisor.. " " "

HOCKING VALLEY

The Hocking Valley announces that the following is its organization, effective with the return to private control:

H. E. Huntington.Chairman of the board....New York.
Geo. W. Stevens..President .....Richmond, Va.
C. E. Graham....Senior vice-president.....New York.
F H. Davis.....Vice-president ..... "
G. B Wall.....Vice-president .....Richmond, Va.
H T. Wickham...Vice-pres. and gen. counsel. " "
F. M. Whitaker..Vice-pres. charge of traffic. " "
A. Trevvett.....Secretary and treasurer....New York.
H. F. Lohmeyer..Assistant secretary ..... "
W. N. Cott.....Asst. sec. and asst. treas...Columbus, Ohio.
F. D. Hodgson...Controller ..... " "
A. C. Rearick....Counsel .....New York.
Wilson & Rector.Solicitors .....Columbus, Ohio.
W. S. Bronson...General attorney .....Richmond, Va.
H. Frazer .....Consulting engineer..... " "

HUDSON & MANHATTAN

The Hudson & Manhattan announces that the following is its organization, effective with the return to private control:

W. C. Fisk.....Chairman of the board....New York
Oren Root .....President ..... " "
J. Vipond Davies.Chief engineer..... " "
Fletcher H. Sillick.Controller ..... " "
James S. O'Neale.Treasurer ..... " "
Robert B. Kay....Sec. and assistant treas.... " "
P. C. Miller.....Real estate agent..... " "
Carl S. Klumpp..General superintendent..... " "
Harry W. Webber.Purchasing agent..... " "

ILLINOIS CENTRAL

The general officers of the Illinois Central and the Yazoo & Mississippi Valley have been announced as follows:

C. H. Markham...President .....Chicago.
C. M. Kittle.....Senior vice-president ..... "
L. W. Baldwin...V.-p. in charge of operation. "
F. B. Bowes.....V.-p. in charge of traffic... "
M. P. Blauvelt....V.-p. in charge of account. "
W. S. Horton....General counsel ..... "
A. S. Baldwin....V.-p. in charge Chi. ter. im. "
W. Summerhays..Purchasing agent ..... "
D. R. Burbank....Secretary .....New York.
R. E. Connolly....Treasurer ..... " "

The following officers have been appointed by D. W. Longstreet, traffic manager of the Illinois Central and the Yazoo & Mississippi Valley:

FREIGHT

V. D. Fort.....Assistant traffic mgr.....New Orleans, La.
B. J. Rowe.....Coal traffic manager.....Chicago, Ill.
W. M. Rhett.....General foreign agent..... " "
Donald Rose.....European traffic manager..London, Eng.
H. J. Schweitert..General develop. agent.... Chicago, Ill.
W. Haywood.....Asst. to Traffic mgr.....Chicago, Ill.

Northern and Western Lines

C. C. Cameron....General freight agt.....Chicago, Ill.
J. H. Cherry.....Asst. gen. freight agent.... " "
F. H. Law.....Asst. gen. freight agent.... " "
F. C. Furry.....Asst. gen. freight agent.... " "
G. W. Becker....Asst. gen. freight agent.... " "
H. G. Powell.....Asst. gen. freight agent.... " "
Wm. Smith, Jr....Asst. gen. freight agent....St. Louis, Mo.

Southern Lines

J. Hattendorf.....General freight agent.....Memphis, Tenn.
E. K. Bryan.....Asst. gen. freight agent.... " "
J. L. Sheppard....Asst. gen. freight agent.... " "
W. B. Ryan.....Asst. gen. freight agent.... " "
M. L. Costley.....General freight agent.....New Orleans, La.
B. T. Breckenridge.Asst. gen. freight agent....Louisville, Ky.

PASSENGER

Northern and Western Lines

H. J. Phelps.....General passenger agent...Chicago, Ill.
J. V. Lanigan....Asst. gen. passenger agt.... " "
F. D. Miller.....Asst. gen. passenger agt....St. Louis, Mo.

Southern Lines

W. H. Brill.....General passenger agent...New Orleans, La.
A. C. Linton.....Asst. gen. passenger agt.... " " "
R. J. Carmichael.Asst. gen. passenger agt....Memphis, Tenn.

KANSAS CITY SOUTHERN LINES

The following officers and agents of the Traffic department of lines indicated have been appointed, effective on March 1:

KANSAS CITY SOUTHERN, ARKANSAS WESTERN, AND POTEAU VALLEY

Freight Traffic Department

H. A. Weaver...General freight agent.....Kansas City, Mo.
J. R. Mills.....Asst. gen. freight agent... " " "
L. V. Beatty.....Asst. gen. freight agent... " " "
J. O. Hamilton...Asst. gen. freight agent...Texarkana, Tex.

Passenger Traffic Department

S. G. Warner....Gen. pass. & ticket agent..Kansas City, Mo.
S. G. Hopkins....Asst. gen. pass. agent....Texarkana, Tex.
F. D. Downie.... General baggage agent....Kansas City, Mo.
J. A. McManus..Traveling passenger agent. " " "

TEXARKANA & FORT SMITH

Freight Traffic Department

J. O. Hamilton...General freight agent.....Texarkana, Tex.

Passenger Traffic Department

S. G. Hopkins....General passenger agent..Texarkana, Tex.

KANSAS CITY SOUTHERN, ARKANSAS WESTERN, TEXARKANA & FORT SMITH, AND POTEAU VALLEY

POTEAU VALLEY

Agricultural and Industrial Department

F. K. Woodruff..Agr. & industrial agent...Kansas City, Mo.
J F. Newsom....Agriculturist ..... " " "

Traffic Agents

C. H. Stevens....General agent .....Beaumont, Tex.
E. A. Rouse.....Traveling freight agent.... " "
Henry Brown ....General agent.....Chicago.
E. C. Worthley..Traveling freight agent... " "
G. H. Dougherty.General agent.....Dallas, Tex.
J. M. McDermott.Traveling freight agent... " "
C. J. Koepsell....General agent.....Detroit, Mich.
H N. Hall.....General agent.....Ft. Smith, Ark.
Guy Lord .....Traveling freight agent... " "
G. M. Riley.....General agent.....Houston, Tex.
J. B. Gibson.....Traveling freight agent... " "
E. G. Spencer....General agent.....Joplin, Mo.
L. O. Scoville....Traveling freight agent... " "
P A. Dudley.....General agent.....Kansas City, Mo.
F. E. Brown.....Traveling freight agent.... " " "
F. M. Seymour, Jr. Traveling freight agent... " " "
F. E. Haskell.....General agent.....Lake Charles, La.
H. J. Snyder....General agent.....Los Angeles, Cal.
C. P. Hoch.....General agent.....New York City.
J. M. Carriere...General agent.....New Orleans, La.
J. de Trava Carter.Traveling freight agent... " "
G. J. Wadlinger..General agent.....Pittsburgh, Pa.
H. J. O'Connor..Traveling freight agent... " "
B. A. Rogers.....General agent.....St. Louis, Mo.
C. S. Cox.....Traveling freight agent... " "
C. M. Wilkinson..General agent.....San Antonio, Tex.
H J. Snyder.....General agent.....San Francisco, Cal.
I. W. Dudley.....General agent.....Seattle, Wash.
J. C. Walker.....General agent.....Shreveport, La.
C. I. Martin.....Traveling freight agent... " "
George Helme ...General agent.....Texarkana, Tex.
J. B. Blanton.....General agent.....Tulsa, Okla.

LEHIGH VALLEY

The organization of the Lehigh Valley effective with its return to private control is announced as follows:

EXECUTIVE DEPARTMENT

E. E. Loomis....President .....New York & Phila.
J. A. Middleton..Vice-president .....New York
F. L. Blendinger.. " ..... "
E. H. Boles.....Vice-pres. & genl. counsel.. "
C. E. Hildum....Comptroller .....New York & Phila.
D. G. Baird.....Secretary .....Philadelphia
E. C. Mann.....Treasurer ..... "
J. Wm. Robbins..Assistant secretary ..... "
E. A. Albright.... " " .....New York
H. R. German.... " " ..... "
H. J. McQuade...Purchasing agent ..... "
R. D. Van Duzer.General land and tax agent. "
John Duffy .....Assistant to president..... "

OPERATING AND MAINTENANCE

F. L. Blendinger..Vice-president .....New York
G. H. Foster.....Assistant to vice-president. "
J. F. Maguire....General manager .....Bethlehem, Pa.
G. T. Hand.....Chief engineer .....New York
J. N. Haines.....Supt. transportation .....Bethlehem, Pa.
G. L. Moore.....Engineer mainten. of way.. "
F. N. Hibbits.....Supt. of motive power..... "
F. Hartenstien...Asst. to general manager... "
A. M. McGill....Asst. supt. of motive power. "
W. L. Tracy.....Shop superintendent.....Sayre, Pa.
J. E. Brong..... " " .....Packerton, Pa.
M. J. Booth.....Chief of police.....New York
J. F. Caskey.....Supt. of telegraph .....Bethlehem, Pa.
H. B. Brown.....Supt. fuel department..... "
J. M. Heath.....Freight claim agent.....Philadelphia, Pa.
F. H. Elmore....Chief of insurance bureau..New York
C. F. Fenwick....Supt. floating equipt.....Jersey City, N. J.
T. J. Clarken....Mgr. Ltge. & frgn. frt. dept.New York
A. Ross.....Supt., New York div.....Jersey City, N. J.
M. A. Mulligan...Supt., N. J. & Lehigh div..Easton, Pa.
F. M. Barker.....Supt., Wyoming div.....Wilkes-Barre, Pa.
P. T. Reilly.....Supt., Mahon. & Haz'n div.Hazleton, Pa.
W. W. Abbott...Supt., Seneca div.....Sayre, Pa.
R. L. Gebhardt...Supt., Auburn div.....Auburn, N. Y.
P. J. Flynn.....Supt., Buffalo div.....Buffalo, N. Y.
M. D. Young.....Supt., Lake div..... "
W. I. Powers....Supt., Morris Canal div....Phillipsburg, N. J.
F. X. Baur.....Supervisor, transportation..Bethlehem, Pa.
P. A. Ellerman...Supt., dining car service...Easton, Pa.

TRAFFIC

J. A. Middleton..Vice-president .....New York
C. A. Blood.....Traffic manager ..... "

Freight

F. J. Woulfe.....Asst. traffic manager.....New York
E. J. Henry.....Western traffic manager...Chicago, Ill.
H. C. Hamilton..General freight agent.....New York
H. C. Burnett....Asst. genl. freight agent.... "
W. L. Donaldson. " " " " ....Buffalo, N. Y.
F. H. Moser.....Coal freight agent.....New York
B. F. Dewey.....Milk agent..... "
T. Clem Beck....Chief of Tariff Bureau.... "
O. F. Johnson....Asst. to traffic mgr..... "
M. J. Ormond....Foreigt frt. and ltge. agent. "
A. C. McIntyre.. City freight agent..... "
P. H. Burnett....Industrial agent ..... "

Passenger

N. W. Pringle...Gen. passenger agent.....New York
P. S. Millspaugh.Asst. genl. passenger agent.Philadelphia
J. F. Andrews.... " " " " ..New York

(Lehigh Valley, Continued)

A. B. Hill	Western passenger agent	Chicago, Ill.
F. E. Hammann	Genl. bag. agt. & man., M.T.	New York
D. G. Roesch	Asst. to genl. pass. agent	"

Freight and Passenger Department Representatives

G. E. Taylor	Division freight agent	Bethlehem, Pa.
S. K. Weaver	Division passenger agent	"
R. G. McDowell	Division freight agent	Wilkes-Barre, Pa.
C. E. Chapman	Division passenger agent	"
I. F. Kurtz	Division freight agent	Sayre, Pa.
C. A. Barber	Division passenger agent	Ithaca, N. Y.
A. J. Whitney	Division freight agent	Auburn, N. Y.
M. P. Howell	General agent	Rochester, N. Y.
D. F. Lindsley	Division passenger agent	Buffalo, N. Y.
G. B. Peterson	Commercial agent	Newark, N. J.
Henry Martens, Jr.	Division passenger agent	"
F. W. Lyons	Commercial agent	Hazleton, Pa.
Frank Erdman	" "	Geneva, N. Y.
W. T. Moore	Foreign freight agent	Philadelphia, Pa.
Ira S. Auch	District freight agent	"
W. H. Morrison	General agent	Boston, Mass.
J. F. Sullivan	" "	New Haven, Conn.
E. F. Neagle	" "	Detroit, Mich.
H. H. Roberts	District passenger agent	"
B. B. Harris	General agent	Cleveland, Ohio
G. A. Gamble	" "	St. Louis, Mo.
J. P. Brazill	" "	Minneapolis, Minn.
F. H. Briggs	" "	Kansas City, Mo.
E. R. Thorpe	" "	Toronto, Ont.
H. Higginbottom	Canadian passenger agent	"
M. Wolf	General agent	Indianapolis, Ind.
N. A. Rahte	" "	Milwaukee, Wis.
J. F. James, Jr.	" "	Toledo, Ohio
W. B. Lindsay	Eastern passenger agent	New York

LEGAL AND VALUATION

E. H. Boles	Vice-pres. and genl. coun.	New York
R. W. Barrett	General solicitor	"
E. H. Burgess	Asst. general solicitor	"
C. A. Major	Asst. to general solicitor	"
H. W. Smith	" " " "	"
C. D. O'Connell	" " " "	"
W. F. Gleeson	Claims attorney	"
M. C. Cleveland	Valuation engineer	"

ACCOUNTING AND TREASURY

C. E. Hildum	Comptroller	New York & Phila.
A. F. Bayfield	Assistant comptroller	Philadelphia
J. I. Morrison	General auditor	"
E. Laughton	Auditor of traffic	"
C. H. Radcliffe	Auditor of disbursements	"
E. C. Mann	Treasurer	"
G. W. Wiley	Assistant treasurer	"
J. Wm. Robbins	" "	"

LEHIGH & NEW ENGLAND

A portion of the new Lehigh & New England organization was given in last week's issue, page 657. Other appointments are announced as follows:

Chas. W. Brown	Superintendent	Bethlehem, Pa.
E. H. Shipman	Chief engineer	" "
T. J. Fretz	Gen. freight and pass agt.	" "
E. Hughes	Purchasing agent	Philadelphia.
J. L. Stone	Real estate agent	"
E. W. Drinker	Freight claim agent	Bethlehem, Pa.

LONG ISLAND

The organization of the Long Island, effective with the return of the property to private control, is announced as follows:

EXECUTIVE DEPARTMENT

Ralph Peters	President	New York.
Henry Tatnall	Vice-president	Philadelphia.
A. J. County	Vice-president	"
Frank E. Haff	Secretary	New York.
C. L. Addison	Asst. sec., asst. to pres.	"

TREASURY DEPARTMENT

J. F. Fahnestock	Treasurer	Philadelphia.
John M. Wood	Assistant treasurer	"
Frank E. Haff	Assistant treasurer	New York.
H. C. Lawser	Cashier	Philadelphia.
A. V. Johnson	Paymaster	Jamaica, N. Y.

ACCOUNTING DEPARTMENT

E. A. Stockton	Controller	Philadelphia.
T. J. Ludlam	Auditor	New York.
F. W. Nichols	Auditor of revenue	"

TRAFFIC DEPARTMENT

P. H. Woodward	General passenger agent	New York.
Donald Wilson	General freight agent	"
G. F. Stump	Asst. general freight agent.	"
H. B. Fullerton	Director agri'c't'l dvpmnt.	Medford, N. Y.

LEGAL DEPARTMENT

F. I. Gowen	General counsel	Philadelphia.
J. F. Keany	General solicitor	New York.
W. H. Mahler	Claim agent	"

TRANSPORTATION DEPARTMENT

J. R. Savage	General superintendent	New York.
C. D. Baker	Asst. general supt.	Jamaica, N. Y.
W. E. Canning	Superintendent—freight	" "
Ralph Peters, Jr.	Superintendent—passenger	" "
G. C. Bishop	Supt. of motive power	Rich. Hill, N. Y.
E. M. Weaver	Engineer main. of way	Jamaica, N. Y.
H. L. Des Anges	Marine superintendent	L. I. City, N. Y.
L. S. Wells	Supt. telegraph and elec.	New York.
George Mammen	Superintendent of police	Jamaica, N. Y.
R. W. Farrell	Supt. of station service; General baggage agent	" "

ENGINEERING AND VALUATION DEPARTMENTS

L. V. Morris	Chief engineer	Jamaica, N. Y.
George Gibbs	Chief engr. elec. traction	New York.

PURCHASING DEPARTMENT

H. B. Hodges	Purchasing agent	Jamaica, N. Y.
Eugene Wright	General storekeeper	" "

REAL ESTATE, TAX AND INSURANCE DEPARTMENT

H. A. Howarth	Real estate agent	New York.
R. H. Newbern	Supt. of insurance	Philadelphia.

LOUISVILLE, HENDERSON & ST. LOUIS

The following officers of the Louisville, Henderson & St. Louis have been appointed, effective on March 1:

R. N. Hudson	Prest. and gen. manager	Louisville, Ky.
W. L. Mapother	Vice-president	" "
Ridgely Cayce	Secretary	" "
L. W. Botts	Treasurer	" "
J. R. Skillman	General counsel	" "
G. H. Lamkin	Auditor	" "
J. C. Willcox	Assistant auditor	" "
E. V. Riggs	Paymaster	" "
F. D. Ferry	Purchasing agent	" "
W. E. Chambers	General freight agent	" "
E. M. Womack	General passenger agent	" "
W. S. Moore	Engr. maintenance of way	" "
F. C. Ferry	Master mechanic	" "
Sam Stites	Insp. of transportation	" "
W. R. Hensley	Trainmaster	" "
J. S. Moorman	Asst. trainmaster & car ac.	" "

MAINE CENTRAL

The organization of the Maine Central, effective with the return of the railway to private control, is announced as follows:

Morris McDonald	President	Portland, Me.
D. C. Douglass	Vice-pres. and gen. mgr.	" "
G. S. Hobbs	Vice-president traffic	" "
L. M. Patterson	Treasurer	" "
Frank W. York	Assistant treasurer	" "
Arthur P. Foss	Controller	" "
Albert J. Raynes	Assistant controller	" "
Walter P. Reeves	Assist. to assist. controller	" "
Edward C. Paine	Auditor disbursements	" "
N. L. Woodbury	Auditor freight accounts	" "
William E. Lucey	Auditor passenger accounts	" "
Wm. H. Collins	Freight claim agent	" "
S. R. McTaggart	Auditor agencies	" "
H. T. Leighton	Auditor mechanical accts.	" "
Harold J. Cole	Paymaster	" "
Geo. E. Raynes	Assistant paymaster	" "
M. L. Harris	General passenger agent	" "
F. V. Berry	General freight agent	" "
Lucien Snow	Chief of tariff bureau	" "
W. G. Hunton	Industrial agent	" "

MINNEAPOLIS & ST. LOUIS

The following has been announced as the organization which will control the Minneapolis & St. Louis:

Charles Hayden	Chairman of the board	New York
W. H. Bremner	President	Minneapolis, Minn.
F. H. Davis	Vice-president and treas.	New York
F. B. Townsend	Vice-president, traffic	Minneapolis, Minn.
L. C. Fritch	Vice-president	Chicago.
J. S. Bache	Vice-president	New York.
E. E. Nash	General manager	Minneapolis, Minn.
M. L. Bell	General counsel	New York.
R. G. Kenly	Asst. to pres. & chief eng.	Minneapolis, Minn.
A. E. Smith	Comptroller & asst. sec.	" "
W. B. Davids	Secretary & Asst. treas.	New York.
W. W. Cole	Asst. treasurer	Minneapolis, Minn.
M. M. Joyce	General solicitor	" "
D. C. Edwards	General attorney	" "
D. M. Denison	Freight traffic manager	" "
A. B. Cutts	Passenger traffic manager	" "
B. F. Moffatt	General freight agent	" "
C. A. Werlich	Asst. gen. freight agent	" "
R. N. Golden	Asst. gen. freight agent	" "
C. A. Hodgman	Superintendent trans.	" "
R. E. Ryan	Superintendent	" "
J. P. Houston	Superintendent	Minneapolis, Minn.
Wm. Gemlo	Super. of motive power	Oskaloosa, Iowa.
W. G. Manchester	Purchasing agent	" "
S. J. Beardslee	Claims attorney	" "
S. W. Patton	Freight claim agent	" "
G. F. Henry	Asst. secty. & asst. treas.	Des Moines, Iowa.

Freight and Passenger Representatives

J. R. Shannon	General agent	Chicago.
J. B. Helwig	General agent	Cincinnati, Ohio.
G. C. Houk	Commercial agent	Des Moines, Iowa.
J. T. Graffis	General agent	Indianapolis, Ind.
J. W. Hannum	General agent	Kansas City, Mo.
J. C. Glenn	General agent	Minneapolis, Minn.
W. K. Adams	Division passenger agent	" "
E. Harris	General agent	New York, N. Y.
J. T. Redmon	General agent	Peoria, Ill.
H. M. Corbett	General agent	Pittsburg, Pa.
H. W. Koch	General agent	St. Louis, Mo.
E. L. Jones	General agent	San Francisco, Cal.
E. C. Davis	General agent	St. Paul, Minn.
A. C. Herron	General agent	Seattle, Wash.

MISSOURI, KANSAS & TEXAS LINES

The following officers have been appointed on the Missouri, Kansas & Texas Lines, effective on March 1:

C. N. Whitehead	Asst. to rec'r & chf. opr of.	St. Louis, Mo.
E. W. Peabody	Assistant to receiver	"
C. Haile	Chief traffic officer	"
J. M. Bryson	General counsel	"
J. G. Livengood	General auditor	"
F. Johnson	General treasurer	"
G. E. Scott	Purchasing agent	"
C. S. Sherwin	Land and tax commr.	Dallas, Tex.
W. M. Whittenton	Asst. chief oper. officer	"
W. E. Williams	Asst. to chief oper. officer	"
H. P. Anderson	" " " " "	St. Louis, Mo.
Z. G. Hopkins	" " " " "	"
C. R. McDonald	" " " " "	"
A. S. Johnson	General manager	Parsons, Kan.
H. E. McGee	" "	Dallas, Tex.
W. M. Fenwick	General passenger agent	St. Louis, Mo.
W. W. Miller	General freight agent	"
J. F. Garvin	" " "	Dallas, Tex.
C. C. Huff	General solicitor	"
Geo. T. Atkins, Jr.	Freight traffic manager	"
W. G. Crush	Passenger traffic manager	"
O. H. Bower	Auditor	"
A. Eichenberger	Treasurer	Wichita Falls, Tex.
E. T. Nelson	"	Dallas, Tex.

MISSOURI PACIFIC

In addition to the officers appointed on the Missouri Pacific and announced in the *Railway Age* of February 27, page 658, the following have been assigned to positions on that road:

J. Cannon	Asst. gen. manager	St. Louis, Mo.
G. W. Briece	Supt. transportation	"
E. A. Hadley	Chief engineer	"
H. R. Carpenter	Asst. ch. eng. construction	"
R. C. White	Asst ch. eng. maintenance	"

MOBILE & OHIO

The names of the general officers of the Mobile & Ohio and the Southern Railway in Mississippi are given in the list of officers of the Southern Railway system which appears elsewhere in this issue. The officers in local charge of the system are as follows:

E. E. Norris	Vice-president operation	St. Louis, Mo.
C. B. Hayes	V-p. ex. offic. at corp. hqrs.	Mobile, Ala.
W. W. Middleton	Auditor	" "
L. A. DeOrnellas	Assistant auditor	" "
E. T. Jervey	Auditor of disbursements	" "
A. R. Cameron	Auditor of receipts	" "
Carl Fox	General solicitor	St. Louis, Mo.
C. E. Ervin	General superintendent	
E. C. Rendell	Gen'l supt., transporation	Mobile, Ala.
J. J. Thomas, Jr.	Supt. mot. pow. & car equip.	" "
B. A. Wood	Chief engineer	" "
J. A. Turner	Purchasing agent	" "
W. J. Diehl	General storekeeper	" "
J. B. Murphy	Supt. telegraph	Jackson, Tenn.
Dr. Harry T. Inge	Chief surgeon	Mobile, Ala.
C. A. Pigford	Supt., Mobile division	Meridian, Miss.
B. B. Tolson	Supt., St. Louis division	Murph'boro, Tenn.
A. L. Pollard	Supt. of terminals	St. Louis, Mo.
F. E. Patton	Supt., Southern Ry. in Miss.	Columbus, Miss.
H. L. Wright	General inspector	St. Louis, Mo.
V. J. Thompson	Supervisor of safety	" "
Walter Shipley	Traffic manager	" "
R. L. McKellar	Foreign freight traf. mgr.	Louisville, Ky.

NEW YORK CENTRAL.

The staff organization of the New York Central Lines was given in last week's issue, page 659. The following appointments have been made by P. E. Crowley, vice-president of the New York Central Railroad:

R. D. Starbuck	Assistant vice-president	New York
R. J. Cary	General counsel	" "
W. C. Bower	General purchasing agent	" "
L. F. Vosburgh	Traffic manager	" "
G. M. Glazier	Auditor	" "
E. L. Rossiter	Treasurer	" "
D. L. Gray	Assistant traffic manager	" "
James Webster	Assistant traffic manager	Chicago, Ill.
L. A. Robinson	Passenger traffic manager	New York
W. A. Terry	Freight traffic manager	Chicago, Ill.
G. C. Woodruff	General freight agent, T. T.	New York
D. E. Gelatt	General freight agent, L. T.	" "
W. J. Moore	Asst. general freight agent	" "
Harry Parry	General passenger agent	" "
W. B. Pollock	Mgr., marine department	" "
W. O. Thompson	Gen. supt. rolling stock	Buffalo, N. Y.
F. W. Brazier	Asst. to gen. supt. rol. st.	New York
F. H. Hardin	Cf. engr. mot. power & r. s.	" "

NEW YORK, CHICAGO & ST. LOUIS

The organization of the New York, Chicago & St. Louis has been announced as follows:

O. Van Sweringen	Chairman of the board	Cleveland, Ohio
J. J. Bernet	President	" "
C. C. Denney	Vice-pres. & genl. mgr.	" "
M. Van Sweringen	Vice-president	" "
W. S. Hayden	"	" "
J. R. Nutt	"	" "
C. L. Bradley	"	" "
H. D. Howe	Vice-pres. & genl. counsel	" "
W. D. Turner	Secretary	" "
L. B. Williams	Treasurer	" "
A. M. Spencer	Assistant treasurer	" "
L. R. Deevers	Comptroller	" "
W. J. Bergen	Consult. & valuation engr.	" "
B. E. Morgan	Traffic manager	" "

NEW YORK, NEW HAVEN & HARTFORD

The executive organization of the New York, New Haven & Hartford was given in last week's issue, page 657. The following is the new organization of the accounting department of the road:

H. S. Palmer	Controller	New Haven, Conn.
T. M. Prentice	Assistant to controller	" " "
A. R. Down	General accountant	" " "
J. E. Murphy	Statistician	" " "
G. T. Carmichael	Assistant to controller	" " "
A. Mackrille	Auditor of revenue	" " "
C. E. Hendrickson	Auditor of freight receipts	" " "
G. H. Nero	Aud. of passenger receipts	" " "

(New York, New Haven & Hartford, Continued)

W. L. Spicer	Auditor of disbursement	New Haven, Conn.
J. J. Ward, Jr.	Asst. Aud. Disbursements	" " "
F. H. Palmer	Auditor of Miscel. Accts.	" " "
G. H. Stachle	Car accountant	" " "
G. L. Winlock	Aud. of overcharge claims	Boston, Mass.

NORFOLK & WESTERN

The organization of the Lehigh Valley, effective with its return to private control, is announced as follows:

EXECUTIVE DEPARTMENT

N. D. Maher	President	Roanoke, Va.
A. C. Needles	Vice-president, operation	"
T. S. Durant	Vice-president, traffic	"
E. H. Alden	Vice-president, finances	"
Chas. S. Churchill	V.-p., real est., purch., val.	"

PURCHASES, REAL ESTATE AND VALUATION DEPARTMENTS

E. T. Burnett	Genl. purchasing agt	Roanoke, Va
V. A. Riton	Real estate agent	"
C. F. Losh	Valuation engineer	"
J. H. Clemmitt	Purchasing agent	"
J. W. Wade	General storekeeper	"

OPERATING DEPARTMENT

W. J. Jenks	General manager	"
J. M. Rodgers	Statistician	"
W. S. Battle, Jr.	General claim agent	"
J. B. Baskerville	Asst. general claim agent	"
W. R. Dawson	Asst. to general manager	"
G. Dunglinson, Jr.	" " " "	Bluefield, W. Va.
D. E. Spangler	Genl. supt. of transp.	Roanoke, Va.
E. A. Blake	Genl. supt. East. genl. div.	"
J. T. Carey	Genl. supt. West. Gen. div.	Bluefield, W. Va.
J. E. Crawford	Chief engineer	Roanoke, Va.
A. Kearney	Supt. motive power	"
G. W. Jett	Supt. telegraph	"
D. W. Richards	Signal engineer	"
E. M. Graham	General agent	Norfolk, Va.
C. H. Blakemore	Chairman, Safety Com.	Roanoke, Va.
S. S. Gale	Chief surgeon	"
E. S. Moore	Supt. of transportation	"
J. R. Talbott	Supt. car service	"
W. H. Johnson	Supt. terminals	Norfolk, Va.
D. F. Peters	Supt., Norfolk div.	Crewe, Va.
J. D. Hester	Supt., Shenandoah div.	Roanoke, Va.
J. W. Cook	Supt., Radford div.	"
A. S. Payne	Supt. terminals	"
W. O. Franklin	Supt., Pocahontas div.	Bluefield, W. Va.
H. C. Weller	Supt., Scioto div.	Portsmouth, Ohio

NORTHERN PACIFIC

The officers named below have been appointed to the positions named on the Northern Pacific, effective on March 1:

Howard Elliott	Chairman	New York City.
F. L. Stetson	General counsel	" "
Edw. A. Gay	Sec. & asst. treas.	" "
E. M. Willis	Asst. sec. and asst. treas.	
J. M. Hannaford	President	St. Paul, Minn.
Charles Donnelly	Exec. vice-pres.	" " "
C. W. Bunn	Vice-pres.; gen. coun.	" " "
W. T. Tyler	Vice-pres.; main't. oper'n.	" " "
J. G. Woodworth	Vice-pres.; traffic	" " "
F. W. Sweney	Controller	" " "
C. A. Clark	Treasurer	" " "
R. H. Relf	Assistant secretary	" " "
H. E. Stevens	Chief Engineer	" " "
J. M. Hughes	Land Commissioner	" " "
George T Reid	Asst. to the president	Tacoma, Wash.

PERE MARQUETTE

The Pere Marquette announces the following changes in its personnel, effective with the return of the railroad to private control:

E. N. Brown	Chairman board of direc's.	Detroit, Mich.
Frank H. Alfred	Pres. & gen. manager	" "
W. E. Martin	Assistant treasurer	New York
J. L. Cramer	Vice-pres., treas. & asst. sec.	Detroit, Mich.
S. L. Merriam	General counsel	" "

All these officers return to the positions they held prior to federal control with the exception of J. L. Cramer, who prior to federal control was secretary and treasurer and during federal control, federal treasurer.

PHILADELPHIA & READING

A portion of the new organization of the Philadelphia & Reading was given in the *Railway Age* of February 27, page 660. The following will give the details of the new organization complete:

EXECUTIVE DEPARTMENT

Ed. T. Stotesbury	Chairman of the board	Read. Ter., Phila.
Agnew T. Dice	President	Read. Ter., Phila.
John F. Auch	Assistant to the president	Read. Ter., Phila.
Charles H. Ewing	Vice-pres., oper. & maint.	Read. Ter., Phila.
Ed. B. Crosley	Vice-president, traffic	Read. Ter., Phila.
George Ziegler	Secretary	Read. Ter., Phila.
Jay V. Hare	Assistant secretary	Read. Ter., Phila.
Harry E. Paisley	Treasurer	Read. Ter., Phila.
John S. Sneyd	Assistant treasurer	Read. Ter., Phila.
Charles Heebner	General counsel	Read. Ter., Phila.
William L. Kinter	General solicitor	Read. Ter., Phila.
Albert B. Bierck	Controller	Read. Ter., Phila.
John D. Landis	Purchasing agent	Read. Ter., Phila.

OPERATING AND MAINTENANCE DEPARTMENT

Chas. H. Ewing	Vice-president	Read. Ter., Phila.
Fred. M. Falck	General manager	Read. Ter., Phila.
James M. Gilland	Transportation assistant	Read. Ter., Phila.
Wm. H. Keffer	General superintendent	Read. Ter., Phila.
R. Boone Abbott	Ass't gen. superintendent	Reading, Pa.
Frank S. Stevens	Engineer maint. of way	Reading, Pa.
Alday H. Yocum	Signal engineer	Sp. Gar. St., Phila.
Joseph C. Peters	Supt. Phila. division	Read. Ter., Phila.
Charles A. Beach	Supt. New York division	Read. Ter., Phila.
Nat. W. Jones	Ass't supt. N. Y. division	Read. Ter., Phila.
Isaac T. Tyson	Supt. R. & H. divisions	Reading, Pa.
C. E. Chamberlin	Ass't supt. Harrisburg div.	Harrisburg, Pa.
W. Frank. Eckert	Supt. W. & C. division	Reading, Pa.
Victor B. Fisher	Supt. Shamokin division	Tamaqua, Pa.
James E. Turk	Supt. Atlantic City R.R. / Supt. Dela. R. Ferry Co.	Camden, N. J.
Nathan Francis	Ass't supt. Del. Riv. F. Co.	Camden, N. J.
Irwin A. Seiders	Supt. M. P. & Roll. Equip.	Reading, Pa.
Rob B. Rasbridge	Supt. car department	Reading, Pa.
William L. Rice	Supt. Reading shops	Reading, Pa.
Oscar W. Stager	Supt. transportation	Read. Ter., Phila.
Lle. D. Shearer	Supt. telegraph	Reading, Pa.
John Miller	Supt. time service	Sp. Gar. St., Phila.
John P. Connolly	Supervisor mail traffic	Jersey City, N. J.
Clarence K. Klink	Real estate agent	Read. Ter., Phila.
Gordon Chambers	Ass't real estate agent	Read. Ter., Phila.
C. E. Dilkes, Jr.	Tax agent	Read. Ter., Phila.
Sam. T. Wagner	Chief engineer	Read. Ter., Phila.
Clark Dillenbeck	Ass't chief engineer	Read. Ter., Phila.
Fred. Jaspersen	Ass't chief engineer	Read. Ter., Phila.
O. M. Thomson	Special agent	Read. Ter., Phila.
O. H. Hagerman	Manager marine dep't	Pt. Richm'd Phila.
William Brown	Shipping and freight agent	Pt. Reading, N. J.

TRAFFIC DEPARTMENT

Edw. B. Crosley	Vice-president	Read. Ter., Phila.
Robert L. Russell	Freight traffic manager	Read. Ter., Phila.
Edgar D. Hilleary	General freight agent	" " "
Benj. R. Boggs	Ass't general freight agent	" " "
John W. Hewitt	Division freight agent	" " "
Wm. D. Corfield	Division freight agent	" " "
Wm. B. Gheen	Division freight agent	" " "
Chris. H. Morgan	Division freight agent	Harrisburg, Pa.
Harry C. Stauffer	General coal freight agent	Read. Ter., Phila.
Charles C. Rambo	Coal freight agent	" " "
Edson J. Weeks	Passenger traffic manager	" " "
Edwin L. Lewis	General passenger agent	" " "
Ed. D. Osterhout	Ass't gen. passenger agent	" " "
Harry W. Souders	Gen. baggage agent	" " "
Samuel W. Derr	Supt. dining cars	" " "
George F. Ingram	District passenger agent	" " "
J. Sidman Selby	District passenger agent	Atlantic City, N. J.
D. Lorah Mauger	District passenger agent	Reading, Pa.
George O. Roper	District passenger agent	Williamsport, Pa.

LEGAL DEPARTMENT

Charles Heebner	General counsel	Read. Ter., Phila.
Wm. L. Kinter	General solicitor	" " "
Wm. C. Brister	General claim agent	" " "
Thos. W. Fister	Asst. general claim agent	" " "
Geo. K. Powell	Chief of police	Sp. Gar. St., Phila.
Wm. J. Wilson	Freight claim agent	Read. Ter., Phila.

ACCOUNTING DEPARTMENT

A. B. Bierck	Controller	Read. Ter., Phila.
H. R. McCormack	Auditor of disbursements	" " "
Philip J. Kelly	Auditor freight traffic	" " "
Thos. S. Neale	Asst. auditor freight traffic	" " "

(*Philadelphia & Reading, Continued*)

Henry Forster ...Asst. auditor freight traffic.Read. Ter., Phila.
Alf. A. Johnson..Auditor traffic receipts.... " " "
Wm. E. Murphy..Auditor passenger traffic..Sp. Gar. St., Phila.

PURCHASING DEPARTMENT

John D. Landis..Purchasing agent.....Read. Ter., Phila.
Wesley A. Clem..Assistant passenger agent.. " " "
Louis F. Beneke..Stationer .....Sp. Gar. St., Phila.
R. J. Stackhouse..General storekeeper.....Reading, Pa.

PHILADELPHIA & READING RELIEF ASSOCIATION

George Ziegler....Chairman advis'y com.....Sp. Gar. St., Phila.
Walter Hoffman..Superintendent ..... " " "
Dr. Caspar Morris.Chief Med. Exam..... " " " "

VALUATION DEPARTMENT

Advisory Committee

Chas. H. Ewing..Vice-president .....Read. Ter., Phila.
Chas. Heebner ...General counsel ..... " " "
Sam'l T. Wagner.Chief engineer ..... " " "

Valuation Committee

Chas. Hansel.....Consulting Valuation Engr.New York.
E. Y. Allen.....Valuation Engineer .....Term. Bldg., Phila.
Henry L. Laning..Asst. Valuation Engineer.. " " "
Clarence K. Klink.Real estate agent.....Read. Ter., Phila.
Edw. F. Sterner..Civil engineer ..... " " "
Wm. L. Kinter...General solicitor ..... " " "
Albert B. Bierck..Controller ..... " " "

PITTSBURG & SHAWMUT

Officers of the Pittsburg & Shawmut have been announced as follows:

A. C. Griffith.....Auditor and treasurer.....Kittanning, Pa.
J. T. Colbert.....General superintendent..... " "
R. E. Ball.....General freight & pass. agt. " "
W. W. Morrison.Engr. maintenance of way.Brookville, Pa.
A. H. Ream.....Supt. of m. p. and equip... " "
D. C. Morgan....Purchasing agent .....Kittanning, Pa.
C. B. Reed.....General storekeeper..... " "
C. J. Best.....Special agent ..... " "

RICHMOND, FREDERICKSBURG & POTOMAC

The following is the new organization of the Richmond, Fredericksburg & Potomac, and of the Washington Southern, which was merged into the former on February 14:

Wm. H. White...President .....Richmond, Va.
Norman Call ....Vice-pres. & secretary..... "
Eppa Hunton, Jr..General counsel ..... "
D. K. Kellogg....Treasurer ..... "
W. P. Terry.....Assistant secretary ..... "
W. C. Carrick....General auditor ..... "
J. E. Cox.....Auditor of revenue..... "
J. B. Mordecai...Traffic manager ..... "
W. D. Duke.....General superintendent..... "
C. W. Culp.....Supt. transportation..... "
E. K. Grady.....Trainmaster ..... "
T. R. Goech.....Supt. of telegraph..... "
S. B. Rice.....Engineer, maint. of way.... "
E. M. Hastings..Principal asst. engineer.... "
H. J. Warthen....Supt. motive power..... "
W. T. Bryant....Road foreman of engines.. "
R. J. Rouse.....Purchasing agent ..... "
T. B. McDowell..Car accountant ..... "
Douglas Call.....Paymaster & asst. treas.... "
R. M. Colvin.....Superintendent .....Potomac Yard, Va.

ST. LOUIS-SAN FRANCISCO SYSTEM

In addition to the appointments on the St. Louis-San Francisco, announced in the *Railway Age* of February 27, page 658, the following officers have been assigned to duties on that road:

EXECUTIVE AND FINANCIAL DEPARTMENTS

T. A. Hamilton....Vice-pres. & asst. to pres...St. Louis, Mo.
A. H. Jones.....Supervisor of wages..... " "

OPERATING DEPARTMENT

J. E. Hutchison...General manager.....Springfield, Mo.
C. J. Stephenson..Asst. to general manager.. " "
H. H. Brown.....General superintendent.... " "
F. H. Shaffer.....Supt., Eastern division.... " "
C. H. Claiborne...Supt., Northern division...Fort Scott, Kans.
F. G. Faulkner....Supt., River and Cape div..Chaffee, Mo.
J. T. L. Brooks...Supt., terminals.....Springfield, Mo.

ACCOUNTING DEPARTMENT

S. J. Fortune.....Assistant general auditor..St. Louis, Mo.
G. B. Perkins..... " " " " " "
H. W. Press.....Asst. gen. aud. chg. st'tist'cs. " "
C. T. Davis.....Valuation accountant..... " "
G. B. Davis.....Auditor of disbursements.. " "
F. C. Freiburg....Auditor, freight accounts.. " "
Conrad GoehausenAsst. auditor, frt. accts., in chg. frt. overch'ge claims. " "
J. C. Briggs.....Auditor, passenger accts... " "
J. C. Starkey.....Auditor, station accounts... " "
H. W. Johnson...Car accountant.....Springfield, Mo.

ENGINEERING DEPARTMENT

C. B. Spencer.....Valuation engineer.....St. Louis, Mo.
H. B. Barry.....Principal asst. engineer.... " "
J. M. Sills.....District engineer.....Springfield, Mo.
D. E. Gelwix.....Div. engr., Eastern div..... " "
R. Owen.....Acting div. engr., S. W. div.Sapulpa, Okla.
E. T. Bond.....Div. engr., Western div....Enid, Okla.
H. F. Busch.....Div. engr., Northern div...Ft. Scott, Kan.
J. G. Taylor.....Div. engr., Southern div...Memphis, Tenn.
L. L. Kerns.....Div. eng., Riv'r & Cape div.Chaffee, Mo.
Perry Topping....Div. engr., Central div.....Ft. Smith, Ark.

The office of assistant chief engineer has been abolished and the district engineer will report to the general superintendent on maintenance of way matters and to the chief engineer on engineering matters. Division engineers will report directly to the division superintendents in charge of their respective territories on maintenance of way matters and to the district engineer on engineering matters.

MECHANICAL DEPARTMENT

C. C. Higgins.....Supt. of motive power.....Springfield, Mo.

LEGAL DEPARTMENT

J. L. McCormack. Supt. frt. loss & dam. claims.Springfield, Mo.

The following will be in part the organization which will govern the four lines of this system, the St. Louis, San Francisco & Texas, the Ft. Worth & Rio Grande, and the Brownwood North & South:

G. H. Schleyer...Vice-pres. and gen'l mgr...Ft. Worth, Tex.
T. A. Hamilton..Vice-president .....St. Louis, Mo.
A. Hilton..... " " ..... " "
F. H. Hamilton...Asst. sec'y and asst. treas.. " "
C. W. Michel.....Assistant secretary.....New York
W. A. McAuliffe.Assistant treasurer..... "
W. F. Evans.....General solicitor.....St. Louis, Mo.
A. H. Jones.....Supervisor of wages..... " "
R. B. Cochran....Asst. to v.-pres. & gen. mgr.Ft. Worth, Tex.
J. F. Simms.....Superintendent ..... " "
F. P. Swartz.....District engineer..... " "
T. E. Bliss.....Division engineer..... " "
C. O. Jackson....General passenger agent.... " "
W. B. Wells.....General freight agent..... " "

St. Louis, San Francisco & Texas

In addition to the officers named above, the following have been appointed on the St. Louis, San Francisco & Texas:

L. C. Wilds.....Secretary and treasurer....Ft. Worth, Tex.
E. B. Findlow....Auditor ..... " "
E. H. Bunnell....Assistant auditor.....St. Louis, Mo.

Fort Worth & Rio Grande

In addition to the officers named above, the following have been appointed on the Fort Worth & Rio Grande:

C. W. Hillard....Vice-president .....New York
L. C. Wilds.....Secretary and treasurer....Ft. Worth, Tex.
E. B. Findlow....Auditor ..... " "
E. H. Bunnell....Assistant auditor.....St. Louis, Mo.

Brownwood North & South

In addition to those named above, the following officers have been appointed on the Brownwood North & South:

Lee Watson.....Vice-pres., secr'y & auditor.Brownwood, Tex.
Brooke Smith....Treasurer ..... " "
L. C. Wilds.....Asst. sec'y and asst. treas..Ft. Worth, Tex.
E. B. Findlow....Assistant auditor..... " "

Paris & Great Northern

The following is the organization as announced for the Paris & Great Northern:

J. F. McReynolds.V.-pres., sec., aud. & treas.Paris, Tex.
T. A. Hamilton...Vice-president .....St. Louis, Mo.
A. Hilton..... " " ..... " "

(Paris & Great Northern, Continued)

F. H. Hamilton...Asst. sec'y and asst. treas..St. Louis, Mo.
C. W. Michel.....Assistant secretary.....New York
W. A. McAuliffe..Assistant treasurer..... "
W. F. Evans.....General solicitor.....St. Louis, Mo.
E. H. Bunnell.....Assistant auditor..... " "
A. H. Jones.....Supervisor of wages..... " "

ST. LOUIS SOUTHWESTERN LINES.

In addition to the appointments announced in the *Railway Age* of February 27, page 662, the following officers have been appointed on the St. Louis Southwestern and the St. Louis Southwestern of Texas:

OPERATING DEPARTMENT

W. A. Webb.....Vice-pres. & genl. mgr.....Tyler, Tex.
W. Masby.....Supt. transportation ..... " "
C. H. Jennings..Supt. dining cars.....Texarkana, Tex.

LEGAL DEPARTMENT

W. A. Conaway..Tax agent .....St. Louis, Mo.

ENGINEERING DEPARTMENT

A. A. Matthews..Chief engineer .....Tyler, Tex.
H. VonHovenberg.Sanitary engineer .....Texarkana, Tex.
C. D. Purdon....Consulting and val. eng....St. Louis, Mo.

PURCHASING STORES DEPARTMENTS

E. T. Irving.....Tie and timber agent.....Texarkana, Tex.
D. V. Atkinson..Traveling storekeeper .... " "

ACCOUNTING DEPARTMENT

H. R. Hurst.....Special acct., president's of. St. Louis, Mo.

TRAFFIC DEPARTMENT

P. T. Cole.....Agricultural commissioner. St. Louis, Mo.

SPECIAL

E. Richards.....Superintendent safety.....Mt. Pleasant, Tex.
F. R. Campbell...Chief special agent.....Tyler, Tex.
A. E. Chace.....Chief surgeon .....Texarkana, Tex.

St. Louis Southwestern

In addition to the above officers and those noted in a previous issue of *Railway Age*, the following have been appointed on the St. Louis Southwestern:

J. R. Turney.....Asst. general solicitor.....St. Louis, Mo.
J. D. Watson.....Genl. traffic mgr..... " " "
A. J. Lehmann....Asst. genl. freight agent... " " "
R. D. Cobb.....General auditor ..... " " "
J. H. Pahlmann...Auditor of disbursements.. " " "
H. H. Berry.....Superintendent .....Illmo, Mo.

St. Louis Southwestern of Texas

The following have been appointed on the St. Louis Southwestern of Texas:

TRAFFIC DEPARTMENT

J. F. Lehane.....Vice-pres., charge traffic...Tyler, Tex.
W. F. Murray....General freight agent..... " "
T. H. Lawrence..Genl. passenger agent..... " "
W. J. Doyle.....Industrial agent .....Dallas, Tex.
C. C. Rockenback.Asst. industrial agent..... " "
S. F. Baker.....Genl. agent, freight dept..Tyler, Tex.
A. Hoover.....Genl. agent, passenger dept. " "

ACCOUNTING DEPARTMENT

A. R. Wood.....Auditor .....Tyler, Tex.
H. P. Taylor.....Assistant auditor ..... " "
T. I. Boyette.....Auditor frt. receipts..... " "
M. B. Grimes.....Auditor, pass. receipts..... " "

STORES DEPARTMENT

C. C. Marshall...General storekeeper .....Tyler, Tex.

OPERATING DEPARTMENT

H. H. Hooper...Superintendent .....Mt. Pleasant, Tex.
K. C. Marshall... " .....Tyler, Tex.

MECHANICAL DEPARTMENT

B. J. Peasley....Supt. motive power.....Tyler, Tex.

In addition to these appointments the following traffic appointments have been made:

F. E. Rownd.....Commercial agent.....Kansas City, Mo.
Clark Kretschmar.General traveling agt.....St. Louis, Mo.
C. E. Scott.....Commercial agent.....Pittsburgh, Pa.
W. D. May..... " " .....Memphis, Tenn.
R. W. Byrne..... " " .....Cincinnati, O.
W. G. Adams.....Soliciting frt. & pass. agt...Nashville, Tenn.
A. W. Reese.....Pacific Coast agent.....Los Angeles, Cal.
T. R. Challenor...Commercial agent.....Cairo, Ill.
S. C. Yeaman..... " " .....New Orleans, La.
F. W. Christopher. " " .....Chicago
H. J. Flynnt.....Soliicting freight agent....Louisville, Ky.
Geo. L. Leitner...Commercial agent.....Detroit, Mich.
J. T. Ferguson... " " .....Shreveport, La.
Edwin Stewart...Division freight agent.....Little Rock, Ark.
W. H. Townsend.Gen. east. frt. & pass. agt..New York City
W. G. Adams.....Soliciting frt. & pass. agt...Nashville, Tenn.

SAN ANTONIO & ARANSAS PASS

The following appointments have been announced on the San Antonio & Aransas Pass, effective March 1:

G. B. Goodloe....Assistant general manager. San Antonio, Tex.
Boyle, Ezell & Grover .....} General attorneys..... " " "
J. W. Terry.....Auditor ..... " " "
H. F. Smith.....Treasurer ..... " " "
J. C. Mangham...General freight agent..... " " "
G. F. Lupton.....General passenger agent... " " "
G. E. Chamberlain.Land and tax agent..... " " "
F. L. Carson.....Mechanical superintendent. Yoakum, Tex.
L. Andrews.....Chief engineer.....San Antonio, Tex.
J. L. Cowan.....Purchasing agent..... " " "
L. W. Earnest....General claim agent..... " " "
F. E. Jones.....Freight claim agent..... " " "
A. J. Dimaline....Supt. car service..... " " "
H. M. Madison...Farm and immigration agt. " " "
H. Dickson.....Supt. of telegraph.....Yoakum, Tex.

SEABOARD AIR LINE

A portion of the new organization of the Seaboard Air Line was announced in last week's issue, page 658. B. C. Prince, freight traffic manager, has since announced the following as the organization of the freight traffic department:

E. T. Wilcox....Asst. freight traffic mgr...Norfolk, Va.
G. S. Rains.....Asst. freight traffic mgr... " "
J. H. Ketner.....General freight agent..... " "
J. H. Toomer.....Asst. general freight agent. " "
R. H. Eberly.....Asst. general freight agent. " "
T. T. Masengill...Asst. general freight agent. " "
S. P. Springfellow.Asst. freight traffic mgr...Atlanta, Ga.
R. W. Daniel.....Asst. general freight agent.Birmingham, Ala.
C. E. Muller.....Asst. general freight agent.Jacksonville, Fla.
H. M. Boykin.....Asst. general freight agent.Richmond, Va.
C. C. Graves.....Asst. general freight agent.Charleston, S. C.
E. J. Parrish.....Asst. general freight agent Savannah, Ga.
J. G. Cantrell.....General western agent.....Chicago.
E. E. Hunter.....Division freight agent.....Wilmington, N. C.
G. C. Poole.....Division freight agent.....Raleigh, N. C.

SOUTHERN PACIFIC

The following is the new organization of the Southern Pacific insofar as it was available at the time of going to press. The remainder will appear in next week's issue.

J. Kruttschnitt...Chairman exec. committee..New York
Lewis J. Spence..Director of traffic..... " "
William Sproule..President ..... " "
H. W. de Forest..Vice-president ..... " "
J. P. Blair.....General counsel..... " "
A. D. McDonald..Vice-pres. & controller.... " "
W. A. Worthington Vice-pres. & asst. to chm... " "
F. H. Plaisted....Asst. dir. of traffic..... " "
Gordon M. Buck..Asst. counsel..... " "
F. H. Wood.....Atty. & com. counsel..... " "
J. D. Isaacs.....Consulting engineer..... " "
A. K. Van Deventer Treasurer ..... " "
F. W. Mahl.....Director of purchases..... " "
Hugh Neill.....Clerk and secretary " "
H. B. Johnson...Assistant controller..... " "
W. F. Bull.....Asst. clerk & asst. sec'ty.... " "
G. M. Thornton..Asst. treasurer..... " "
J. A. Simpson....Transfer agent..... " "
John B. Weaver..Asst. clerk.....Anchorage, Ky.
J. H. R. Parsons..Agent .....New Orleans, La.

PACIFIC LINES

Wm. Sproule.....President .....San Francisco, Cal.
Wm. F. Herrin...Vice-pres. & Chief counsel.. " " "
Paul Shoup.....Vice-pres. & asst. to pres... " " "
E. O. McCormick. Vice-pres., pro. & develop... " " "
G. L. King.....Assistant secretary..... " " "
J. H. Dyer.....Gen. mgr. chge. oper. & mte. " " "
F. L. Burckhalter. Asst. gen. mgr, No. dist.... " " "

(Southern Pacific—Pacific Lines, Continued)

T. H. Williams...Asst. gen. mgr, So. dist....San Francisco, Cal.
Wm. Hood.....Chief engineer.....Los Angeles, Cal.
F. K. Ainsworth..Chief surgeon.....San Francisco, Cal.
F. W. Taylor.....Purchasing agent..... " " "
A. S. McKelligon.General storekeeper..... " " "
R. McIntyre.....Asst. to gen. manager..... " " "
R. J. Clancy.....Asst. to gen. manager..... " " "
Geo. McCormick.Gen. supt. motive power.... " " "
G. F. Richardson.Supt. of transportation..... " " "
R. L. Ruby.....Asst. supt. of transpor..... " " "
W. H. Kirkbride..Eng. of m. of w. & str..... " " "
Wm. Jaekle.....Asst. eng. of m. of w. & str. " " "
A. H. Babcock....Electrical engineer..... " " "
E. L. King.....Supt. of telegraph..... " " "
S. M. Estabrook..Mgr. of d. cars, h. & res.... " " "
D. O'Connel.....Chief special agent..... " " "
T. F. Rowlands...Supt., western division.....Oakland Pier, Cal.
J. D. Brennan....Supt., Sacramento div.....Sacramento, Cal.
J. W. Fitzgerald..Supt., Shasta division.....Dunsmuir, Cal.
A. T. Mercier.....Supt., Portland division....Portland, Ore.
B. A. Campbell...Supt. Salt Lake division....Ogden, Utah
G. E. Gaylord....Supt. Stockton. division....Stockton, Cal.
T. A. Hern.....Supt., Coast division.....San Francisco, Cal.
F. K. Worthington.Supt., San Joaquin div.....Bakersfield, Cal.
W. H. Whalen...Supt., Los Angeles div.....Los Angeles, Cal.
Wm. Wilson.....Supt., Tucson division.....Tucson, Ariz.
Guy V. Shoup....general attorney.....San Francisco, Cal.
D. R. Sessions....Claims attorney..... " " "
D. V. Cowden....Tax attorney..... " " "
B. A. McAllaster.Land commissioner..... " " "
T. O. Edwards...Auditor ..... " " "
R. Adams.....Assistant auditor..... " " "
F. L. McCaffery..Assistant auditor..... " " "
F. W. Pope.....Auditor of Freight acc..... " " "
C. E. Fellows.....Asst. auditor of fr. acc..... " " "
O. F. Giffin.....Auditor of passenger acc... " " "
J. Kenedy.....Auditor of disb. acc..... " " "
E. Hickman.....Auditor of mis. acc..... " " "
W. H. Dewey....Aud. of Equip. Serv. Acc... " " "
W. F. Ingram....Assistant treasurer..... " " "
H. P. Thrall.....Mail traf. mgr. & serv. in... " " "
G. L. King.....Secretary leased lines..... " " "
E. B. Leavitt.....Lease agent..... " " "
G. W. Luce.....Freight traffic mgr..... " " "
T. A. Graham....Asst. Freight traf. mgr..... " " "
E. W. Clapp.....General freight agent..... " " "
H. C. Hallmark...General freight agent.....Los Angeles, Cal.
H. A. Hinshaw...General freight agent.....Portland, Ore.

SOUTHERN RAILWAY SYSTEM

Fairfax Harrison, president of the Southern Railway System, in announcing the organization of that system, effective on its return to private control, says that for purposes of administration the lines of the system will be grouped as follows:

Lines West.—The Cincinnati, New Orleans & Texas Pacific, Alabama Great Southern, New Orleans & Northeastern, Harriman & Northeastern, Cincinnati, Burnside & Cumberland River, Northern Alabama, Georgia Southern & Florida, and the following operating divisions of the Southern Railway, viz.: St. Louis division, Louisville division, Memphis division, Atlanta division, Columbus division, Birmingham division, and Mobile division.

Lines East.—The following operating divisions of the Southern Railway, viz.: Washington division, Danville division, Charlotte division, Richmond division, Norfolk division, Winston-Salem division, Columbia division, Charleston division, Spartanburg division, Knoxville division, Coster division, Appalachia division, Asheville division, Murphy division, Transylvania division.

The organization is as follows:

EXECUTIVE DEPARTMENT

L. E. Jeffries.....Vice-pres. & gen. counsel..Washington
H. W. Miller.....V.-pres., con., pur. "
E. H. Coapman...Vice-president, operation... "
Lincoln Green....Vice-president, traffic..... "
J. B. Munson.....Vice-pres., res. ex. of., west.Cincinnati, Ohio
R. B. Pegram....V.-p., res. ex. of., Atlanta..Atlanta
T. F. Steele.....Vice-pres., N. O. & N. E...New Orleans
A. H. Plant.....Assistant to president.....Washington
F. S. Wynn.....Secretary and treasurer....New York
E. H. Kemper....Controller .....Washington
J. H. McCue.....Exec. general agent.....Bristol, Va.-Tenn.
E. C. Gatewood... " .....Rectortown, Va.
D. S. Abernethy..Exec. general agent.....Chattanooga, Tenn.
T. F. Steele..... " .....New Orleans, La.
C. L. Candler.... " .....Norfolk, Va.

CONSTRUCTION, PURCHASES, REAL ESTATE, ETC.

H. W. Miller.....Vice-president .....Washington
T. H. Gatlin.....Chief engineer of con..... "
Pearce Horne....Supt. r. e. and conv. dept... "
E. B. Berry.....Supt. of insurance..... "
W. F. H. Finke...Tie and timber agent..... "
C. R. Craig.....Gen. purchasing agent..... "
A. Telford.....Asst. gen. pur. agent..... "
L. H. Skinner....Purchasing agent..... "
E. E. Hanson....Asst. purchasing agent.... "

LEGAL DEPARTMENT

L. E. Jeffries....Vice-pres. & gen. counsel..Washington
Al. P. Humphrey.Gen. solicitor, west. dist....Louisville, Ky.
Edward Colston..Gen. sol. C. N. O. & T. P..Cincinnati, Ohio
S. R. Prince.....General solicitor .....Washington
Charles J. Rixey..Commerce counsel.....Washington
H. O'B. Cooper..Gen. atty. per. inj. claims..Washington
Charles Clark....Solicitor, frt. claims.....Washington
F. G. Tompkins..Div. counsel (S. C.).....Columbia, S. C.
J. E. Hall.....Div. counsel (Ga. So. & Fla., in Ga. and So. Ry in Fla.).Macon, Ga.
C. B. Northrop...Commerce counsel.....Washington
Henry Thurtell...Commerce counsel..... "
H. L. Walker....Commerce counsel..... "
I. W. Haun.....Chief claim agent..... "
L. Baumgardner..Asst. chief claim agent.... "
J. L. Hatch..... " ....Salisbury, N. C.
G. T. Dallas..... " ....Columbia, S. C.
P. L. Ward..... " ....Atlanta, Ga.
W. A. Fitton..... " ....Birmingham, Ala.
C. C. Sudduth.... " ....Chattanooga, Ten.
T. B. Haynes..... " ....Knoxville, Tenn.
Ernest Simon..... " ....Cincinnati, Ohio
Dr. W. Applegate.Chief surgeon.....Washington

FINANCIAL DEPARTMENT

E. H. Kemper....Controller .....Washington
J. B. Duke.....General auditor..... "
H. W. Oliver....Asst. general auditor..... "
A. H. Oliver.....Assistant to controller..... "
J. Aitcheson.....General accountant..... "
W. T. Pollard....Auditor of construction.... "
Leon Strauss.....Asst. auditor of con..... "
J. S. Tassin.....Auditor of valuation..... "
W. W. Hanson...Auditor of misc. rents.... "

The following appointments apply to the Southern Railway; Georgia Southern & Florida; Northern Alabama; Atlantic & Yadkin; High Point; Randleman, Asheboro & Southern; Yadkin; Carolina & Tennessee Southern, and Asheville & Craggy Mountain.

A. E. Fowler.....Auditor .....Washington
T. L. Shelton.....Assistant auditor..... "
W. H. Luckett...Assistant auditor..... "
F. D. Pollard....Auditor of disbursements.. "
T. H. Seay.....Auditor of freight accounts. "
F. A. Truan.....Asst. auditor of freight acc. "
W. P. Rose.....Auditor of passenger acc.. "
A. T. Martin.....Auditor of station accounts. "

The following appointments apply to the Cincinnati, New Orleans & Texas Pacific; Alabama Great Southern; New Orleans & Northeastern; Harriman & Northeastern, and Cincinnati, Burnside & Cumberland River.

J. A. Robinson....Auditor .....Cincinnati, Ohio
W. G. Casteel....Assistant auditor..... "
F. X. Fleming....General accountant..... "
K. Kemper.....Auditor of disbursements.. "
D. E. Driscoll....Auditor of freight accounts. "
J. G. Rumpler....Auditor passenger accounts. "

The following appointment is on the Carolina & Northwestern:

W. K. Kearsley..Auditor .....Chester, S. C.

The following is on the Cumberland:

J. R. Campbell...Auditor .....Artemus, Ky.

The following appointments are on the Blue Ridge, Danville & Western; Hartwell; Hawkinsville & Florida Southern and Tallulah Falls:

J. M. Forney.....Auditor .....Atlanta, Ga.

(*Southern Railway, Continued*)—OPERATING DEPARTMENT

E. H. Coapman..Vice-president .....Washington
G. R. Loyall.....Asst. vice-president.....
G. W. Taylor....Asst. to vice-president.....
J. Hainen ..... " ..... Headquarters
B. Herman..... " ..... not given in
H. H. Laughton.. " ..... announcement
W. H. Gatchell... " .....
Alex. Grant..... " .....
W. N. Foreacre..Gen. manager, Lines East..Charlotte, N. C.
J. H. Stanfiel.....Gen. manager, Lines West..Cincinnati, O.
J. W. Connelly...Ch. sp. agt., System Lines..Washington

The following list of appointments is not complete. The appointments are each given as promotions, effective March 1:

Lines East

J. S. Lemond....Ch. eng. maint of way & st. Charlotte, N. C.
S. J. Mulvaney...Supt. Asheville div.....Asheville, N. C.
W. C. Hudson....Supt. Charlotte div.....Greenville, S. C.

Lines West

J. W. Wassum...Gen. supt. Southern dist....Birmingham, Ala.
F. P. Pelter.....Gen. supt. S. E. dist.....Macon, Ga.
J. C. Austin.....Supt. Mobile div. (So. dis).Selma, Ala.
M. E. Madden...Supt. Ga. S. & F., S. E. dist. Macon, Ga.
C. Chandler.....Supt. Atlanta div., S. E. dist.Atlanta, Ga.

TRAFFIC DEPARTMENT

Lincoln Green....Vice-president .....Washington
W. H. Tayloe....Passenger traffic manager.. "
E. H. Shaw.....Freight traffic manager.... "
R. L. McKellar...Foreign frt. traffic manager.Louisville, Ky.
G. P. Biles.....Frt. traffic manager, L. W..Cincinnati, Ohio
W. A. Beckler....Pass. traffic manager, L. W. "
J. J. Hooper.....Gen. claim agt., overcharge.Washington
J. C. Williams....Manager, develop. service.. "
W. H. McGuffey..Asst. to vice-president.....Cincinnati
J. M. Woodruff...Asst. to vice-president.....Washington

Freight Traffic Service

R. L. Simpson....Asst. freight traffic manager.Birmingham, Ala.
C. A. Russell..... " " Memphis, Tenn.
G. K. Caldwell.... " " Washington
G. H. Wilcox....Asst. to fr. traffic manager. "
F. D. Claggett....General freight agent.....Atlanta, Ga.
E. R. Oliver..... " " " .....Cincinnati, Ohio
J. H. Drake..... " " " .....Richmond, Va.
R. A. Campbell... " " " .....St. Louis, Mo.
G. H. Kerr.....Asst. general freight agent..Atlanta, Ga.
H. M. Cobb..... " " .. " "
R. J. Brown..... " " .. " "
L. L. McCleskey.. " " .. " "
C. H. Pearson.... " " ..Cincinnati
F. S. Reigel..... " " .. "
W. M. Orr..... " " .. "
D. Cardwell..... " " ..Columbia, S. C.
J. L. Cox..... " " ..Columbus, Miss.
I. L. Graves..... " " ..Knoxville, Tenn.
J. W. Hunter..... " " ..Mobile, Ala.
Wins F. Wilson.. " " ..Richmond, Va.
K. B. Hannigan... " " ..St. Louis, Mo.
B. G. Brown..... " " ..Washington
E. M. Lane.....Asst. to gen. freight agent..Cincinnati, Ohio
C. E. Bell.....Commerce agent.....Washington
F. H. Behring.... " " ..... "
Hamilton Baxter.. " " ..... "
W. C. Harrison...New Eng. freight agent....Boston
R. H. Morris.....Northwestern fr. agt.....Chicago
J. E. Fitzwilson...General eastern fr. agt.....New York
F. W. Parsons....Manager—East. fr. traf. ser.Philadelphia

Division freight agents, district freight agents and commercial agents have been appointed as follows:

A. K. Orr.....Division freight agent.....Asheville, N. C.
A. O. Dawson.... " " " .....Augusta, Ga.
E. T. Steele..... " " " .....Birmingham, Ala.
W. E. Allen..... " " " .....Bristol, Va.-Tenn.
H. D. Luckett.... " " " .....Charlotte, N. C.
W. C. Stephens... " " " .....Chattanooga, Tenn.
Ralph Shropshire. " " " .....Columbia, S. C.
T. B. Dixon..... " " " .....Columbus, Ga.
J. W. Bray..... " " " .....Greensboro, N. C.
J. P. Tocher..... " " " .....Lexington, Ky.
Wm. Humphreys.. " " " .....Louisville, Ky.
F. J. Davis..... " " " .....Lynchburg, Va.
J. M. Cutler..... " " " .....Macon, Ga.
J. B. Bannon..... " " " .....New Orleans, La.
W. T. Turner....Division freight agent.....Norfolk, Va.
J. H. Andrews.... " " " .....Raleigh, N. C.
W. H. Bennett.... " " " .....Rome, Ga.
C. M. Tyler.....Florida freight agent.....Jacksonville, Fla.
P. A. Wright.....District freight agent.....Atlanta, Ga.
W. B. McGroarty. " " " .....Baltimore, Md.
G. W. Benus.... " " " .....Cincinnati, Ohio
J. A. Werne..... " " " .....Evansville, Ind.
F. M. Dunham.... " " " .....Philadelphia, Pa.
E. C. Morgan..... " " " .....Pittsburgh, Pa.
C. C. Elder..... " " " .....Savannah, Ga.
R. D. Miller.....Commercial agent.....Anniston, Ala.
A. B. Hammond.. " " .....Athens, Ga.
R. B. Arthur..... " " .....Augusta, Ga.
J. N. Templeton.. " " .....Birmingham, Ala.
F. M. Kitchell.... " " ..... " "
S. M. Howard.... " " .....Charlotte, N. C.
W. T. Keating.... " " .....Chattanooga, Tenn.
U. G. Soule..... " " .....Chicago
C. C. Woodworth. " " .....Cincinnati, Ohio
W. E. Hurley..... " " .....Cleveland, Ohio
R. H. McDonald.. " " .....Columbia, S. C.
C. M. Agnew.... " " .....Dallas, Texas
E. W. Mihm.... " " .....Detroit, Mich.
C. V. Manker... " " .....East St. Louis, Ill.
Alex. McBee .... " " .....Greenville, S. C.
W. N. Pendleton. " " ..... " "
J. G. Hill..... " " .....Indianapolis, Ind.
D. E. Cook..... " " .....Jacksonville, Fla.
C. F. Cowell..... " " .....Johnson City, Tenn.
J. R. L. Wulff.... " " .....Kansas City, Mo.
T. J. T. Hayes... " " .....Knoxville, Tenn.
L. W. Sanderson. " " .....Little Rock, Ark.
G. H. Perry..... " " .....Louisville, Ky.
H. J. Herron.... " " .....Macon, Ga.
H. S. Lemmon... " " .....Memphis, Tenn.
C. S. Shawhan... " " .....Mobile, Ala.
L. P. Tschopik... " " .....Montgomery, Ala.
J. T. Mudd..... " " .....Nashville, Tenn.
W. F. Rogers.... " " .....New Orleans, La.
C. A. Egly..... " " .....New York, N. Y.
F. E. R. Sawin... " " ..... " "
W. A. Wright.... " " .....Norfolk, Va.
E. M. Jones..... " " .....Peoria, Ill.
Robert Mayo..... " " .....Philadelphia, Pa.
W. M. Israel..... " " .....Rochester, N. Y.
R. M. Kendrick.. " " .....Selma, Ala.
J. G. Kitchell.... " " .....Sheffield, Ala.
B. Z. Ruff..... " " .....Spartanburg, S. C.
C. F. Lauer..... " " .....St. Louis, Mo.
H. F. Phipps..... " " .....Tampa, Fla.
Howell Peeples .. " " .....Washington, D. C.
G. N. Lawson.... " " .....Wins.-Salem, N. C.

PASSENGER TRAFFIC SERVICE

H. F. Cary.....General passenger agent...Washington
E. N. Aiken..... " " " ...Cincinnati, Ohio
C. A. Benscoter..Asst. gen'l pass. agent.....Knoxville, Tenn.
J. L. Meek..... " " " " .....Chattan'ga, Tenn.
J. C. Beam..... " " " " .....Atlanta, Ga.
C. A. Kline..... " " " " .....Washington
F. N. Westerman. " " " " .....Cincinnati, Ohio
J. C. Conn.....General baggage agent.....Chattanooka, Tenn.

Division and district passenger agents, etc., have been appointed as follows:

J. H. Woods.....Division passenger agent...Asheville, N. C.
James Freeman... " " " ...Birmingham, Ala.
W. E. Allen..... " " " ...Bristol, Va.-Tenn.
R. H. Graham.... " " " ...Charlotte, N. C.
G. C. Blackburn.. " " " ...Chattanooga, Tenn.
W. E. McGee..... " " " ...Columbia, S. C.
W. H. Caffey..... " " " ...Knoxville, Tenn.
C. B. Rhodes..... " " " ...Macon, Ga.
C. A. DeSaussure. " " " ...Memphis, Tenn.
J. R. Wells..... " " " ...New Orleans, La.
C. W Westbury.. " " " ...Richmond, Va.
Stanton Curtis,... " " " ...St. Louis, Mo.
S. E. Burgess.... " " " ...Washington
R. H. DeButts....Eastern passenger agent...New York
Geo. C. Daniels...New England pass. agent..Boston
C. C. Stewart.....Northern passenger agent..Chicago
V. L. Estes.....District passenger agent....Atlanta, Ga.
G. W. Carter..... " " " .....Augusta, Ga.
L. H. Burgess.... " " " .....Baltimore, Md.
C. N. Smith..... " " " .....Birmingham, Ala.
R. W. Hunt..... " " " .....Charleston, S. C.
J. R. Martin..... " " " .....Chattan'ga, Tenn.

(Passenger Traffic Service Continued)

J. C. Volz	District passenger agent	Cleveland, O.
S. H. McLean	" " "	Columbia, S. C.
C. A. Whitworth	" " "	Dallas, Tex.
J. A. Edwards	" " "	Detroit, Mich.
E. E. Barry	" " "	Houston, Tex.
C. F. Bigelow	" " "	Indianapolis, Ind.
G. R. Pettit	" " "	Jacksonville, Fla.
Mitchell Coxwell	" " "	Kansas City, Mo.
H. C. King	" " "	Lexington, Ky.
B. H. Todd	" " "	Louisville, Ky.
J. C. Bland	" " "	Macon, Ga.
A. M. Crawford	" " "	Memphis, Tenn.
F. F. Forth	" " "	Nashville, Tenn.
W. C. Spencer	" " "	New Orleans, La.
F. L. Jenkins	" " "	Philadelphia, Pa.
T. B. Martin	" " "	Pittsburgh, Pa.
J. O. Jones	" " "	Raleigh, N. C.
R. B. Creagh	" " "	Selma, Ala.
R. C. Cotner	" " "	Spartanburg, S. C.
T. J. Connell	" " "	St. Louis, Mo.
J. W. Jamison	" " "	Tampa, Fla.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS

The following officers of the Terminal Railroad Association of St. Louis have been elected, or appointed, effective on March 1:

EXECUTIVE AND FINANCIAL DEPARTMENTS

T. M. Pierce	Acting pres. & gen. counsel	St. Louis, Mo.
F. E. Anderson	Assistant to president	" " "
C. A. Vinnedge	Secretary and auditor	" " "
H. D. Heuer	Asst. sec. & assist. auditor	" " "
G. H. Steinberg	Treasurer	" " "

OPERATING DEPARTMENT

I. L. Burlingame	General manager	St. Louis, Mo.
A. S. Johnson	Asst. general manager	" " "
W. E. McGarry	Asst. to general manager	" " "
Chas. Burlingame	Superintendent	" " "
J. A. Mathewson	Superintendent	" " "
E. H. Harman	Superintendent	" " "
E. Clemens	Supt. of car service	" " "

LEGAL DEPARTMENT

J. L. Howell	General attorney	St. Louis, Mo.
W. M. Hezel	Attorney	" " "
S. P. McChesney	Attorney	" " "
F. D. Fauser	Claim agent	" " "
Hy. Schmittgens, Jr.	Freight claim agent	" " "

TRAFFIC DEPARTMENT

W. C. Stith	Traffic manager	St. Louis, Mo.
J. L. Penney	Division freight agent	" " "
L. W. Putnam	Commercial agent	" " "
B. B. Hickman	General agent freight dept.	" " "
A. C. Barnett	Gen. pass. and ticket agent	" " "

ACCOUNTING DEPARTMENT

E. J. Coady	Assistant to auditor	St. Louis, Mo.
F. E. Sawyer	Freight auditor	" " "

ENGINEERING AND MECHANICAL DEPARTMENTS

H. J. Pfeifer	Chief engineer	St. Louis, Mo.
Wm. Bawden	Supt. mot. power and equip.	" " "

SPECIAL

F. E. Bentley	Supt. of telegraph	St. Louis, Mo.
E. R. Hines	Chief special agent	" " "
H. W. Cox	Real estate agent	" " "

PURCHASING DEPARTMENT

W. G. O'Fallon	Purchasing agent	St. Louis, Mo.

TEXAS & PACIFIC

The Texas & Pacific's executive staff has been announced, as follows:

J. L. Lancaster	Receiver	Dallas, Tex.
C. L. Wallace	"	New Orleans, La.
T. J. Freeman	General counsel	" "
M. D. Cloyd	Treasurer	" "
A. J. Biard	Auditor	Dallas, Tex.
F. J. Burke	Land and tax agent	" "
E. S. Pennebaker	Chief engineer	" "
L. M. Sullivan	Purchasing agent	" "

UNION PACIFIC SYSTEM

Executive and general officers of the Union Pacific System have been announced as follows:

EXECUTIVE, FINANCIAL, LEGAL AND ACCOUNTING DEPARTMENTS

Robert S. Lovett	Chairman of executive com.	New York.
Carl R. Gray	President	Omaha, Neb.
E. E. Calvin	V.-p. charge operation	" "
H. M. Adams	V.-p. charge traffic	" "
W. A. Harriman	Vice-president	New York.
J. D. Farrell	Vice-president	Seattle, Wash.
H. W. Clark	Gen. counsel (O.W.R.&N.)	New York.
Thomas Price	Secretary counsel	" "
F. W. Charske	Comptroller, counsel	" "
F. V. S. Crosby	Treasurer	" "
G. E. Bissonnet	General auditor	Omaha, Neb.
H. J. Stirling	Auditor (Union Pacific)	" "
F. W. Meyer	Auditor (Oregon Short L.)	Salt Lake C., Utah.
F. W. Sercombe	Auditor (O.W.R.&N.)	Portland, Ore.
W. H. Sanford	Asst. treasurer (U. Pac.)	Omaha, Neb.
C. H. Jenkinson	Asst. treasurer (Ore. S. L.)	Salt Lake C., Utah.
J. F. Meyer	Asst. treas. (O.W.R.&N.)	Portland, Ore.
N. H. Loomis	Gen. solicitor (U. Pac.)	Omaha, Neb.
Geo. H. Smith	Gen. attorney (Ore. S. L.)	Salt Lake C., Utah.
A. C. Spencer	Gen. Atty. (O.W.R.&N.)	Portland, Ore.
H. A. Scandrett	Val. C'sel & Com. Counsel	Chicago.
H. J. Plumhof	Asst. to the vice-president	Omaha, Neb.
J. L. Haugh	Assistant to president	" "

OPERATING AND ENGINEERING DEPARTMENTS

R. L. Huntley	Chief engineer	Omaha, Neb.
G. L. Hickey	Supt. transportation	" "
F. E. Lewis	Mgr. dining car & hotel dept.	Ogden, Utah.
E. E. Adams	Consulting engineer	New York.

TRAFFIC DEPARTMENT

F. W. Robinson	Freight traffic manager	Omaha, Neb.
R. R. Mitchell	Asst. freight traffic mgr.	" "
W. S. Basinger	Asst. passenger traffic mgr.	" "
J. L. Amos	Assistant traffic manager	San Francisco, Cal.
R. B. Robertson	Asst. freight traffic mgr.	Chicago.
J.W.McClymonds	Gen. agt. refrigeration ser.	Omaha, Neb.

Unless otherwise noted all of the above officers will have jurisdiction over the Union Pacific System.

Simultaneously the organization on the various lines comprising the Union Pacific System was announced as follows:

Union Pacific

W. M. Jeffers	General manager	Omaha, Neb.
A. W. Woodruff	Gen. supt. northern district	" "
E. Stenger	Gen. supt southern district	Kansas City, Mo.
C. E. Fuller	Supt. mot. power and mach.	Omaha, Neb.
R. B. Robinson	Engr. maintenance of way	" "
J. P. Carey	Supt. Nebraska division	" "
A. W. McDuffie	Supt. Wyoming division	Cheyenne, Wyo.
N. A. Williams	Supt. Western division	Green River, Wyo.
A. F. Vick Roy	Supt. Colorado division	Denver, Colo.
G. O. Brophy	Supt. Kansas division	Kansas City, Mo.
C. E. Hedrix	Supt. Central division	Marysville, Kan.
G. C. Smith	Purchasing agent	Omaha, Neb.
U. K. Hall	General storekeeper	" "
A. B. Rutherford	Stationer	" "
P. F. Frenzer	Supt. of telegraph	" "
H. A. Hansen	Supt. dining cars & hotels	" "
W. D. Lincoln	Car service agent	" "
A. F. Jonas, M.D.	Chief surgeon	" "
A. R McNitt	Freight claim agent	" "

Oregon Short Line

H. V. Platt	General manager	Salt Lake C., Utah.
F. Knickerbocker	General superintendent	Pocatello, Idaho.
A. C. Hinckley	Supt. mot. power and mach.	" "
W. R. Armstrong	Assistant chief engineer	Salt Lake C., Utah.
B. H. Prater	Engr. maintenance of way	Pocatello, Idaho.
E. C. Manson	Supt. Idaho division	" "
R. A. Pierce	Supt. Utah division	" "
C. E. Brooks	Supt. Montana division	" "
G. H. Robison	Purchasing agent	Salt Lake C., Utah.
R. F. Miller	General storekeeper	Pocatello, Idaho.
M. H. Brown	Supt. of telegraph	Salt Lake C., Utah.
F. W. Gentsch	Supt. dining cars and hotels	Ogden, Utah.
T. S. Kinnersley	Car service agent	Salt Lake C., Utah.
S. H. Pinkerton	Chief surgeon	" " " "
Howard Bruner	Freight claim agent	" " " "

Oregon-Washington Railroad & Navigation Company

J. P. O'Brien	General manager	Portland, Ore.
M. J. Buckley	General superintendent	" "
F. N. Finch	Assistant general supt.	" "
C. E. Peck	Supt. mot. power and mach.	" "
S. Murray	Assistant chief engineer	" "
B. E. Palmer	Supt. First division	" "

(Oregon-Washington R.R. & Nav. Co., Continued)

W. Bollons.....Supt. Second division.....La Grande, Ore.
A. G. Kamm.....Supt. Third division.....Walla Walla, W'h.
Wm. Connolly....Supt. Fourth division.....Spokane, Wash.
E. R. Budd.....Supt. Fifth division.....Ilwaco, Wash.
G. W. Saul.....Purchasing agent .....Portland, Ore.
J. L. Irish.....General storekeeper ..... " "
E. A. Klippel.....Supt. of telegraph ..... " "
J. T. Jarvis.....Supt. dining cars and hotels. " "
S. A. Hering.....Car service agent ..... " "
K. A. Mackenzie.Chief surgeon ..... " "
James Copeland...Freight claim agent..... " "

St. Joseph & Grand Island

W. M. Jeffers....General manager .....Omaha, Neb.
R. L. Huntley....Chief engineer ..... " "
G. L. Hickey.....Supt. transportation ..... " "
E. Stenger.....General superintendent ....Kansas City, Mo.
C. E. Fuller.....Supt. mot. power and mach.Omaha, Neb.
R. B. Robinson...Engr. maintenance of way. " "
C. E. Hedrix.....Superintendent .....Marysville, Kan.
Geo. C. Smith....Purchasing agent .....Omaha, Neb.
U. K. Hall.....General storekeeper ..... " "
A. B. Rutherford.Stationer ..... " "
P. F. Frenzer....Supt. of telegraph..... " "
W. D. Lincoln....Car service agent ..... " "
A. F. Jonas, M. D.Chief surgeon ..... " "
A. R. McNitt.....Freight claim agent..... " "

The organization of the law department of the Union Pacific was subsequently announced by Mr. Loomis, general solicitor, as follows:

Edson Rich.....Assistant general solicitor..Omaha, Neb.
C A. Magaw.....Gen. atty. (Neb. & Iowa).. " "
R. W. Blair.....Gen. atty. (Kan. & Mo.)..Topeka, Kan.
C. C. Dorsey.....General attorney (Colo.)..Denver, Colo.
John W. Lacey...General attorney (Wyo.)..Cheyenne, Wyo.
George H. Smith.General attorney (Utah)..Salt Lake C., Utah.
S. J. Peterson....General claim agent.....Omaha, Neb.
A. W. Scribner...Tax commissioner ..... " "

Simultaneously the traffic department organization on the various lines comprising the Union Pacific System was announced as follows:

Union Pacific

C. J. Lane.....General freight agent.....Omaha, Neb.
H. G. Kaill.....General freight agent.....Kansas City, Mo.
W. H. Garratt....Asst. general freight agent.Omaha, Neb.
C. W. Axtell.....Asst. general freight agent. " "
G. W. Hamilton..Asst. general freight agent. " "
F. B. Choate.....Asst. general freight agent.Denver, Colo.
A. L. Craig.....General passenger agent...Omaha, Neb.
W. H. Murray....Asst. general passenger agt. " "
W. K. Cundiff....Asst. general passenger agt.Denver, Colo.
J. O. Goodsell....Asst. general passenger agt.Kansas City, Mo.
G. L. Alley.....General baggage agent.....Omaha, Neb.
R. A. Smith.....Supervisor of agriculture.. " "

Oregon Short Line

J. A. Reeves.....General freight agent.....Salt Lake C., Utah.
D. R. Gray.....Asst. general freight agent. " " " "
H. E. Godwin....Asst. general freight agent. " " " "
D. S. Spencer....General passenger agent... " " " "
J. B. Durham....Asst. general passenger agt. " " " "
G. L. Alley.....General baggage agent.....Omaha, Neb.
R. A. Smith.....Supervisor of agriculture.. " "

Oregon-Washington Railroad & Navigation Company

H. E. Lounsbury..General freight agent.....Portland, Ore.
A. Kelling.....Asst. general freight agent. " "
J. W. Mount.....Asst. general freight agent. " "
Wm. McMurray..General passenger agent... " "
A. C. Martin.....Asst. general passenger agt. " "
J. H. Regal.....General baggage agent..... " "
C. L. Smith.....Agriculturist ..... " "
W. H. Olin.....Asst. gen. freight & pass. agt.Seattle, Wash.

St. Joseph & Grand Island

C. J. Lane.....General freight agent.....Omaha, Neb.
S. E. Stohr.....Gen. freight & pass. agt...St. Joseph, Mo.
A. L. Craig.....General passenger agent ..Omaha, Neb.
G. L. Alley.....General baggage agent..... " "

Traffic Agents

Traffic department agents were established on March 1, as follows:

W. J. Leonard....Dis. freight & pass. agent..Aberdeen, Wash.
G. W. Roberts....Dis. freight & pass. agent..Astoria, Ore.
R. A. Dennis.....General agent .....Atlanta, Ga.
Joel L. Priest....General agent .....Boise, Idaho.
W. Massey.....General agent .....Boston, Mass.
A. V. Kipp.....General agent .....Butte, Mont.
L. J. Canfield.....General agent .....Calgary, Alta.
R. B. Robertson..Asst. freight traffic mgr...Chicago.
Geo. R. Bierman..Gen. agent passenger dept..
W. H. Connor....General agent .....Cincinnati, Ohio.
W. H. Benham...General agent .....Cleveland, Ohio.
C. B. Fox.....General agent .....Dallas, Tex.
D. M. Shrenk....General agent .....Des Moines, Ia.
A. R. Malcolm...General agent .....Detroit, Mich.
A. D. Grant.....General agent .....Lincoln, Neb.
E. A. Coons.....General agent .....Los Angeles, Cal.
E. G Clay.....General agent .....Milwaukee, Wis.
E. H. Hawley....General agent .....Min'eapolis, Minn.
J. B. DeFriest....General agent .....New York.
James Warrack...General agent .....Oakland, Cal.
W. H. Chevers...General agent .....Ogden, Utah.
F. L. Feakins....General agent .....Philadelphia, Pa.
John D. Carter...General agent .....Pittsburgh, Pa.
C. H. Dexter.....Gen. agent freight dept....Portland, Ore.
J. L. Carney.....General agent .....St. Louis, Mo.
E. J. Hanson.....Gen. agent freight dept....Salt Lake C., Utah.
E. A. Shewe.....Gen. agent passenger dept.
John L. Amos....Assistant traffic manager..San Francisco, Cal.
W. H. Olin.....Asst. gen. freight & pass. agt.Seattle, Wash.
W. S. Elliott.....Dist. freight & pass. agent..
W. R. Skey.....Dist. freight & pass. agent..Spokane, Wash.
Wm. Carruthers..Dist. freight & pass. agent..Tacoma, Wash.
J. H. Cunningham.General agent .....Vancouver, B. C.
G. Van de Water.Dist. freight & pass. agent..Walla Walla, Wsh.
H. M. West.....Dist. freight & pass. agent..Yakima, Wash.

WABASH

The personnel of the organization formed for the Wabash upon the termination of federal control has been announced as follows:

EXECUTIVE DEPARTMENT

Wm. H. Williams.Chairman of board.....New York
J. E. Taussig.....President .....St. Louis, Mo.
W. C. Maxwell...Vice-pres. in charge traffic. " "
S. E. Cotter.....Vice-pres. and gen'l mgr... " "
N. S. Brown.....Vice-pres. & gen'l solicitor. " "
L. G. Scott.....Vice-pres. and controller... " "
H. R. Winthrop..Vice-president .....New York
J. C. Otteson.....Vice-pres., sec'y & treas.... "
T. J. Tobin.....Assistant secretary.....St. Louis, Mo.
W. F. Bender.... " " ..... " "
Orton Brewer.... " " .....New York
Hamilton Convey.Transfer agent..... "

FINANCIAL DEPARTMENT

E. R. Francisco...Local treasurer.....St. Louis, Mo.
P. E. Purcell.....Assistant to comptroller.... " "
F. L. O'Leary.... " " .... " "

LEGAL DEPARTMENT

Winslow S. Pierce.General counsel.....New York
L. H. Strasser....Assistant gen'l solicitor....St. Louis, Mo.

TRAFFIC DEPARTMENT

C. H. Stinson.....Freight traffic manager....St. Louis, Mo.
H. E. Watts.....Pass. traffic manager..... " "
H. G. Holden.....General freight agent..... " "
T. R. Farrell.....Asst. gen'l freight agent... " "
W. A. Hopkins... " " " " " ... " "
F. H. Tristram...Asst. gen'l passenger agent. " "

OPERATING DEPARTMENT

M. B. Casey.....Supt. of transportation.....St. Louis, Mo.
T. J. Jones.....General superintendent..... " "

ACCOUNTING DEPARTMENT

R. E. Berger.....Auditor .....

Obituary

W. R. Shoop, manager of purchasing and stores of the Buffalo, Rochester & Pittsburgh, with headquarters in Rochester, N. Y., died recently at his home in Rochester.

Alexander M. Lupfer, chief engineer of the Spokane, Portland & Seattle, died at his home in Portland, Ore., on February 3 of pneumonia.